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Valedictory Address to the Class of Starling Medical College.

By Prof. JOHN DAWSON.

GENTLEMEN: The relation sustained by you to the faculty of Starling Medical College during the past session is about to be dissolved. In the diploma just received, we, as a faculty, bear testimony of your fitness for the duties of Practitioners of medicine. In view, therefore, of the high responsibilities you are about to assume, allow me, in behalf of my colleagues, to offer you a word or two in the way of a *Valedictory*—more, however, for the purpose of keeping up an agreeable and a time-honored custom, than with any expectation that you will be benefited by what I have to say. Some of you, it is true, are yet young—young in years and also in a knowledge of medicine—and, as a consequence, are to a certain extent impressible; there are others full of years, veterans really in service, and needing nothing in the way of advice.

On entering the profession as practitioners, new duties will devolve on you—duties that pertain to your brethren in the profession, and duties that pertain to the sick. These, I may mention, are fully set forth in the Code of Ethics of the American Medical Association, and I commend this Code to you as embracing a very good summary on professional intercourse.

Good men and great men have been concerned in framing these rules, and allow me to say that they will be found useful in directing your feet in the paths of propriety. This Code, however, falls short in providing for all of the contingencies of professional intercourse. Your own sense of what is right must at last be your guide.

The first question that usually occupies the mind of the young gentleman just about commencing business is, "How can I succeed—what course can I take that will make my medical life a success?"

This question might seem to be of easy solution; but it is not, judging from what is continually passing before our eyes. In some cases success might seem to be the result of accident. This, though, is an appearance. There is no denying the fact, however, that it is often connected with very opposite things, very opposite traits of social character. Sir Astley Cooper, for example, was very polished in his manners. His cotemporary, Abernethy, was full of Abernethyisms. John Hunter, the most remarkable man of the profession, had no taste for promiscuous society, was bluffy and often abrupt in his manners. William Hunter, the brother of John, was a very cultivated gentleman. Abercrombie presented an example of taciturnity; he disliked, it seemed, to talk the necessary amount even for practical purposes. Physick, the head of the American profession for so long, was distant in his manners; but few of his students ever made his acquaintance. Caldwell was a finished colloquist, and those who have read his "Autobiography" will recollect how he insists on the formalities of etiquette, and the compliments he pays to proficiency in this line. Drake, the American Hippocrates, was dignified, courtly, yet ready in repartee, and enjoyed the social circle very much. Chapman had an inexhaustible fund of humor, was always ready for a joke, and for nearly half a century was Philadelphia's favorite punster.

With such examples before you, it would seem difficult to fix upon any moral or social combination as necessary to the getting

of business. Men apparently with opposite traits of character, and with peculiarities not by any means prepossessing, but often the reverse, are seen to become famous and wealthy.

You will, gentlemen, be likely to have a probationary stage in getting business, and during that period you will debate earnestly the course to be pursued. You will find, too, during this period, a great many that will tender you advice. They will do this in all kindness and sincerity. Some will tell you to go into the highways and market-places, as did Socrates, where you can make the acquaintance of the people, learn their modes of thinking and their prejudices, and thus become adapted, as the saying is, to the circumstances surrounding you. Others will suggest to you to hunt up Mrs. Poyntz—every community having one or more of such characters—and secure her services in your behalf. She, it will be told you, knows about every body and every thing—all about the doctors of the place, whether of law, medicine, or divinity, and what their hobbies are. She, you will be informed too, has the power to make or unmake prospects for certain classes, especially new-comers; to modify or stimulate, as may be necessary, and to regulate things generally.

Now all this, gentlemen, looks very plausible in the way of advice. Besides this, Mrs. Poyntz is without doubt a very nice old lady—not very old either. She is distressed when she sees a case of neglected merit, and is always ready to assist in a good cause. Still, the time you would occupy, gentlemen, in hunting Mrs. Poyntz or Mrs. Any-one-else, for the purpose of creating influences in your favor, might as profitably be spent in almost any other way. Attempt success by no device or trick, for such means, to say nothing of their unworthy character, always react. Our people are fond of nonsense for a while, but at last they want the truth, and will have it. Your just claims to patronage may be neglected for a while, often for a good while; but be patient and persevere, and your day will surely come. Often you may feel discouraged and restive when looking around and seeing the knaves and charlatans being employed by those from whom better

things ought to have been expected. Keep your temper, and your logic too, I beg you, under such circumstances. You may say, "Did ever!" but nothing more with impunity. Such characters will be short-lived, unless nourished by your imprudence.

Perhaps, now, a course of conduct that would prove successful would embrace, among other things:

Sincerity of Manner;
Unity of Purpose;
Industry.

I have no time to dilate on these propositions. Indeed, to dilate upon them would be to dilute them. They are axiomatic.

Sincerity is made up of the best of things connected with the moral sense. Without it, character is empty, deformed, degraded; with it, the shabbiest of traits become respectable.

Unity of Purpose.—What shall I say to commend this proposition to your attention? Unity of purpose is of great importance in intellectual movements. It imparts strength. You cannot divide between different pursuits. Your profession will require all of your time. Let no one flatter himself with the delusion that he can act the part of neighborhood surveyor, village lawyer, court-house politician, or preacher.

> "Or in the course of one revolving moon
> Be statesman, chemist, fiddler, and buffoon."

Pardon me, gentlemen, if I tell you that I have seen quite a number of young men, some very gifted ones too, during my professional life, but I have never yet seen one that had any more material in him than enough for the making of a good physician. The great trouble usually has been the other way—the pattern too small. Did you ever really think of the literal effect of dividing between different pursuits? In what respect would such a course differ from an amputation at the median line?

In order to see the folly of chopping one's self up for the performance of a plurality of occupations, think for a moment on the extent of your own field of inquiry, and how inadequate one short

lifetime is to the great work before you. The Arabians, so acute in intellect, were the first to appreciate man's incapacity; and they acted upon it by dividing the profession into sections. As all know, this nation, during the brief period that it concerned itself with scientific medicine, accomplished uncommon results. Medicine and surgery were separated. Medicine was again subdivided, specialties being made of the important diseases.

As the Fates have ordered things for us at the present day, we have too much to do. The practitioner is compelled to practice Medicine and Surgery and Obstetrics; and it is expected that he will be equal to the task placed before him. Gentlemen, the man don't live that is. Either branch is enough—really too much. Sir Charles Bell expended himself upon the nervous system. So did Marshall Hall. How many, indeed, take up a single organ and study its diseases? Some take up a single disease and devote a lifetime to it. And it is by such a course that results worth thinking about have been accomplished.

Look at this subject a little from another stand-point. What is the reason that the Romans had no physicians for the first five hundred years of their existence as a nation? Was it because the Roman intellect was deficient in the qualities required? I think not; for we have had abundant evidence to the contrary. It was because the Roman mind was too much distributed. And we may again ask: Why was it that Celsus and Galen, with their crudities, held dominion over the medical mind of Europe for fourteen centuries? It was because there was no *unity of purpose* in the cultivation of medical science. If a single individual during that long night had made his appearance, possessed of singleness of purpose and ordinary gifts, the spell might have been broken.

I beseech you then, gentlemen, to avoid everything calculated to divert your attention from your profession. Unity of purpose should be your motto. You have no time for a plurality of vocations. Give yourselves up to devotions at the altar of Medicine,

and resolve—"Let others do as they will or may; as for me and my house, we will serve Apollo."

Industry. Why should I dwell on such a subject? I will not, further than the offering for consideration of some very general remarks. Industry is necessary in your profession, because of the vast amount of work before you, and the shortness of time there is to accomplish it. A favorite aphorism of Hippocrates reads thus: "Art is long; life is short; judgment difficult." Nothing is more true, in actual professional life, than the want of time for mastering the requisite amount of knowledge. Saying nothing about contributions which it is the duty of every one to try to make, scarcely any of us have time enough, if even well employed, to become thoroughly acquainted with what is actually necessary to make us respectable practitioners; that is, practitioners that bring to the relief of the patient the reasonable amount of skill, or the skill that the masters of our science would pronounce favorably upon. Be careful then of your time. Watch the moments as they are passing, and see to it that they are occupied so as to count to your advancement. It is true that the people may say of a young physician not inclined to be studious, that he is a nice gentleman, a good citizen, a very good-hearted Christian, a real clever soul; and they may also patronize him to some extent. But, gentlemen, it is a singular fact, that no one has ever permanently succeeded to the business and confidence of an enlightened community without the possession of substantial qualities—qualities that result from labor well directed.

In this connection I will offer you a thought or two on the method of occupying your time.

For awhile—often a good while—after you enter the profession, you will be apt to have some leisure on hand, for it is not to be expected, however fortunate you may be in a location, that all of your time will be taken up with business—with actual practice. The people, you will find, are timid, and wait upon each other to give the "new doctor" a trial. This period of waiting often lasts for years, and it may be remarked, that its length has a

very close and direct relation to the industry and worth of the young physician. How, now, should this time be occupied? Upon the proper solution of this question very much will depend. The road to destiny bifurcates just here. Should a course be adopted having no higher aim than that of merely getting along, or killing time, the future of the individual may be easily predicted. But if, on the contrary, this time should be regarded with care, should be properly employed, good results will certainly follow.

Among the many ways of putting in the time of the waiting period, that of reviewing your college course may be suggested. Many things connected with the lectures on the different departments have been no doubt but faintly impressed upon the mind. This elementary information is your capital in actual practice; it will serve you under all circumstances; it is that without which really you cannot as a practitioner safely do anything. See to it, then, that you are thoroughly acquainted with all the elementary branches—with the alphabet of practical medicine and surgery.

A portion of time may be employed in looking through your literary attainments. Are you well fixed up on the English language? It is no great accomplishment to be a good English scholar; but it is a great blemish to be a poor one. What makes a worse impression upon us than a communication from a physician written in bad English? It is looked upon as mere pedantry to notice errors that so often result from the haste of composition. But gentlemen, the idea of a medical man not being able to know whether or not his own communication is grammatical, is awful, awful. A knowledge of Greek and Latin, although not absolutely indispensable, will nevertheless give you advantages. Hippocrates, and Galen and Celsus wrote in these languages; and no one can ignore the pleasure and benefit of consulting an author in his own language. Besides the nomenclature of Medicine—indeed I may say of science in general—is derived from these languages. You cannot investigate well, that is, you cannot exactly see wha others have done in the profession, without some knowledge of the

ancient languages. And after all that has been said to the contrary, it is the best to write prescriptions in the Latin language.

After becoming actively engaged in the routine of professional business, you should still not be regardless of your surplus time. Some of the most valuable books we have had, have been written amidst the emergencies of actual practice. An author of some celebrity once told me that he had written the most of one of his books while actually engaged in attendance on his cases. To say the least, you will have ample time to record the progress of cases, making note of everything of interest. You will also have time to arrange your notes for your own future use, or for the periodicals of the day.

Cultivate the acquaintance of your peers. This will enable you to compare observations—a practice that so often results in mutual improvement. There is something to be gained by becoming attached to medical societies. Intercourse stimulates effort, modifies extravagant opinions, and destroys dogmatisms. Without communication the mind fails to become either thoroughly or handsomely developed.

In view of what has been said, you are perhaps ready to inquire if it is the intention that medical men just starting out in business, should spend all their time in intellectual pursuits. Is there to be no time, you ask, for relaxation, society, etc.? All the advice, you are ready to say, seems to point to continuous, incessant work. Such questions are pertinent. We all would have studied physiology to poor purpose to have supposed any one capable of spending all his time with things requiring the constant use of the brain. No one could do so to any purpose at all. The brain, like all the organs of the body, requires rest—has its periods when it requires repose. It is true that by changing about to different things, thus allowing one faculty to rest while we call another one into exercise, we may be enabled to lengthen the time of labor, but not to any great extent.

If a professor of chemistry were to take an average specimen of

our young men, put him in a crucible and analyze him, he would find him differ but little in his composition from the following:

Fun, frolic, and fishing tendencies	50.0
Sleeping desires	25.0
Taste for philosophy and science	15.0
Miscellaneous matters, and matters not soluble except in good alcohol	10.0
	100.0

You may be surprised, from this analysis, gentlemen, that the proportion of taste for philosophy and science, should be so small. You need not be. It is large enough for great results. Think what you might accomplish in a lifetime of reasonable length, by employing fifteen per cent. of your time in intellectual pursuits.

Let us look at this matter a little, for it is important.

Bacon who was an intellectual giant, when writing the Novum Organum, only worked about four hours in the twenty-four. Pope also worked but four hours. Scott who filled the world with his books seldom ever devoted more than four and a half hours a day to their composition. This is about the time, too, that our most successful literary men devote to intellectual work.

I am aware, then, gentlemen, that you can work successfully only a portion of your time, and it is this great physiological fact that makes it so necessary for you to be careful. If this time be properly occupied, you will accomplish results that will be above your own expectations.

A reason of some force in favor of employing the brain daily, may be found in the fact that the daily exercise of this organ is necessary to good health—to perfect health, I mean. A physician who devotes four or five hours every day to intellectual pursuits, will, *cæterus paribus*, be more healthy, and capable of more physical endurance, and live longer, than one who does not. The eye, without use, shrinks and becomes diseased. This is true also of every other organ, the brain not excepted. By the employment of the mind daily, so as to prevent the habit of spontaneous, involun-

tary wandering, you will find the power to accomplish results very materially increased. Get into this habit, gentlemen, and things will go well with you—they will.

During the period of pupilage, you have necessarily imbibed without asking questions. You have received the teachings of the masters with the confidence that attaches to youth and inexperience. Now, however, you are approaching a period when each one will set up for himself intellectually—will be compelled to depend upon his own resources. This period is an important one It has its dangers as well as responsibilities. Medicine has given rise, since its first introduction, to speculation—speculation—speculation. You will soon find on every hand those who will say: "lo here, lo there!" The country has never been without a pretty fair supply of those proposing their services in healing the sick. Quite a large number at the present day claim to be oracles—claim the right to instruct the race. In looking over the movements, we find new doctrines are proposed and old ones burnished up a little and proposed as new. More and worse, dogmatisms, absurd and contradictory, are made to serve as foundations for practice, and people are counted uncultivated or self-willed who do not subscribe to them.

You might ask, just here: "How do such things come to pass? I thought medicine a science—an exact, certain science—a something not authorizing diversity in the way of opinions." Well, gentlemen, if we except a few metaphysical axioms, there is nothing certain. Things only rise in the scale of certitude to this point—a *high degree of probability*. Chemistry, so universally credited as being certain, is far from it. Its revelations are mere probabilities. The same remark may be made of physiology and therapeutics, and indeed of all the physical sciences. But in medicine, especially the practical part of it, or *therapeutics*, a great variety of circumstances conspire to get up fogginess in the intellectual atmosphere. The trouble is in the appreciatcn of agencies, and hence the difficulty of knowing to what to attribute results. We invoke Reason, but Reason can't operate—no correct method of getting propositions. Then we take to Experience as the next

best thing. But when we adopt this common mode of testing things in therapeutics, all classes, embracing every phase of intellect, rush forward wishing to be heard. It is because of this the country has been filled with "systems," so-called, conflicting and absurd. The most of them, fortunately for humanity, have had an ephemeral existence, and on this account have been limited in the mischief produced. It has, however, happened every once in a while, that members of the *regular profession* have been visited in strange ways. Some of those we had supposed entirely sound, have lately had spells. Forbes, and Bigelow, and Holmes, have seen things and been wrought upon; and they say: "whereas we were once blind, we can now see." They come out of their paroxysms happy, and in the overflowings of their hearts they would have mankind fall down and confess their errors. Oliver Wendel would perhaps have us turn to the archives of poetry for language with which to express the darkness and sinfulness with which in former days we have been afflicted. For the want of something more radical, he would put the following immortal couplet into the mouths of us all:

"In Adam's fall
We sinned all."

Nothing has appeared like holier work to these gentlemen, than that of sweeping everything there is of therapeutics out of existence by the dash of the pen. "Throw all of the medicines into the ocean," says the author of "Currents and Counter Currents," "and buy a *silver hoe*." "Too much medicine, too much, gentlemen," says the author of "Nature and Art in the Cure of Disease." "You do more harm than good." "You were sent into the world, gentlemen, not to expect that drugs, in and of themselves, are able to accomplish much, if anything, but to look to Nature as the power and the only power that should be trusted in the work of healing disease."

Perhaps now the race would have went back to wearing bear-skins, and to the practice of laying their sick by the road-side for prescriptions, had not these philanthropists made their appearance.

Sir John Forbes feels finely (pardon the alliteration), no doubt, on being knighted by the English government; but posterity may not be so well satisfied with his labors. Every region has to have its poet. Really there seems to be such a thing as *endemic* poetry. The author of "Currents and Counter Currents" figures in this kind of literature, and is excusable for ornamenting it once in a while with things from physic. There is a mighty disposition in some persons to be friendly in the way of furnishing the rest of mankind with opinions. This is very kind, certainly, and thoughtful, too. Hippocrates, who first placed medicine on a philosophical basis, and all those who have been adding by observation and experiment to the common stock for the last two thousand years or more, were mere nodding Homers, good as showing the steps from chaos to order, but unworthy of confidence at the present day. It matters nothing to these gentlemen what has been established, conclusively established by all the rules of evidence. With them, a little close communion with the imagination, in the closet, is entitled to much more regard. Well now, gentlemen, none of us wishes to be impertinent, of course, but may we not in all modesty inquire what has been contributed to medical science by these innovators? What has the author of "Currents and Counter Currents," or the author of "Nature and Art in the Cure of Disease," added to our stock of knowledge? What single thought beyond the engendering of skepticism and the setting of the example of chiming in with the *ad captandum* flings of scoffers, have they furnished us with? They are nice gentlemen—very clever in their way—good-hearted—wishing the race well, too. But their doctrines, which virtually sweep by the board pretty much everything there is of therapeutics, are a little too much. May we not ask the privilege of a little time for making up our minds? They, too, would have us believe that they are very philosophical, very cautious and careful in their investigations—that they have stood on an elevated platform, and looked through the errors of the profession with profoundest sagacity. Still it may be doubted whether any additional endowment, over and above what falls to the lot of

an ordinary specimen of the race, has been vouchsafed to them. The truth is, these geniuses have very tamely surrendered themselves to the god of Sophistry, and he has given them the "*sophism of objections*" with which to amuse themselves. As all know, objections can be made against anything, everything. But the question is this: against which may most objections be urged? Against the doctrines objected to, or the doctrines of the objector? The latter will, in nine cases out of ten, be found the more vulnerable. And this is true of the examples before us. More objections may be urged against the doctrines of Forbes and Holmes, than against what they have criticised.

In this connection, I am happy in being able to assure you that a brighter day is beginning to dawn for medicine. The mind of the age is improving in the more substantial of its faculties. It is beginning to see through the nonsense and empty-headed philosophy that has been preying for some time upon progress. The mere innovator, whether in or out of the profession, is about to be appreciated. Moves made merely for notoriety, or for the purpose of creating a sensation, are about to be diagnosed. The taste of the age is utility—something that has actual value in it, or that leads to valuable results. What is medicine to us or to the world, if by a knowledge of it we are unable to cure disease, lengthen life, mitigate suffering?

Having heard during your attendance on the lectures more or less on the comparative powers of Nature and Art in the cure of disease, it will probably become a source of anxious thought to you to know how far to trust the one, and how much confidence to place in the other. "Must I stand still," inquires the young practitioner, "and trust to Nature to accomplish the cure? or must I interfere—take the case out of Nature's hands, and attempt to cure it with medicaments?"

Well, gentlemen, I can only say to you that I like old Madam Nature very much. She is grand; she is powerful; and does things that surprizes us all. Make her acquaintance, at least, I suggest, and notice the beauty, efficiency, and completeness of her

curative processes. Among inferior animals she not only cures all ordinary diseases, but she sometimes makes a whole limb, or supplies even a head that has been lost. She is not powerful to the same extent over the human organism. Yet do we not see her every day repairing organs and supplying minor parts that have been lost? How often, too, do we see her take up a case that we have abandoned as hopeless, and cure it perfectly? I tell you, young gentlemen, that it would not be a bad move for you to take a few lessons while you are young from this old lady.

But, gentlemen, notwithstanding all of this, and I might have said much more, there are some things that Nature cannot do—some things that are too much for her. Here it is, therefore, that the use of drugs comes in. These are substances also armed with curative powers, and powerful often after Nature has succumbed. I know that there is a little diversity of opinion in the profession as it regards the quantity of drugs that should be used in the cure of diseases. The fashion is small doses. There is a little concealed infidelity at the bottom of this. Beware of it, for it leads to negation, if not to perdition. The truth is, there is really no such thing, in actual practice, as *small* or *large* doses of medicine; the dose is fixed by the character of the case, and not by the number of grains it may happen to weigh. Half a grain of quinine would be poisonous, on account of its quantity merely, in some cases; while, in other cases, fifty grains might prove inert from the same cause. It is the case, I repeat, that makes the dose. Any quantity of quinine, less than that necessary to cure an intermittent, is not entitled to the name of a dose. Allow me then to suggest neither *large* doses nor *small* doses, but scientific doses—doses that will be followed with positive effects. Exercise, gentlemen, faith in your medicines. You may trust many of them to the fullest extent, and not be disappointed.

Your vocation, however, gentlemen, does not terminate in the work of curing disease. A more important field of labor, if possible, is before you. It is the *prevention* of disease. The greatest work of medical men of late years has been in this line. See how

small-pox has been defied and driven from the country by vaccination, and how the period of human life in Europe and America has been extended and happified by improvements in hygiene. There is still room for further improvements in every neighborhood, city and town of our widely extended country. In whatever region you may chance to locate, you will find sources of disease connected with the geology, hydrology, or meteorology thereof. Here you may labor in providing against what, when developed, often proves the scourge of a neighborhood. Such labors will rank you among men of science and the benefactors of the age.

In conclusion, gentlemen, and in behalf of the Faculty of Starling Medical College, I bid you farewell. Go in *peace*, and may the example of that good man Hippocrates be before you always.

Letter from DR. W. A. BROWN, *Surgeon in the Army.*

U. S. HOSPITAL No. 5,
GALLATIN, Tenn., April 18, 1863.

My dear Doctor: I send you a consolidated mortality table of the hospitals at this post, for the months of December, January, February and March. You will doubtless be surprised at the per centum of deaths, but could you have seen the class of patients, it would have been fully explained to you. The great majority of the patients were men who had been transported in ambulances from Kentucky, who had given out on the march after Bragg, and were dropped at this post by the different divisions as they passed through to Nashville, during December and January. They were mostly members of the new regiments, who joined the army at Louisville, and were prostrated and broken down by the forced march through Kentucky, being put with the veteran troops who had become inured to the service, by the campaign through Mississippi and Alabama. Some of those new regiments, immediately after that march, were reduced to one-third the number of men with which they left Louisville. When the hospitals were opened,

no time was had for preparation, or could any consideration be given to the adaptativeness of the buildings used for the purpose. The men were left in colleges, store-rooms, churches and dwelling-houses by the different regiments as the army was moving, and surgeons detailed to attend them.

When the medical officer received his orders and reported for duty, he would find a number of exceedingly sick men strewn upon the floor of some building, with no covering but a blanket and a knapsack for a pillow—without a pallet of straw to lie on—without hospital-steward or nurses, medicines or food.

The first, and about the only thing he could do, would be to get some whisky, and give each man as much as he would drink, and then hunt for a commissary to draw something for them to eat. I never before saw such sorrowful distress, or worked so hard, and experienced such wear and tear of heart and mind. You may imagine the amount of labor the physician would undergo, when you think of him as hospital-steward, druggist, doctor, nurse, cook, and even undertaker, all himself. It was many weeks before the patients could be made comfortable or even decently clean.

Surgeon Hamilton, Medical Director of the post, deserves credit for his energy in obtaining supplies from Louisville with as much promptness as was possible, and the zeal he displayed in alleviating the distress with which he was surrounded. At this time communication was interrupted between Louisville and Gallatin, in consequence of guerilla raids along the line of railroad, and medical supplies were received only after great delay, and coming by river by way of Nashville.

The disease was of a peculiar malignant type, and overcrowding in illy ventilated apartments, and the absence of all those influences so necessary to low forms of disease, rendered medical treatment of little account. Typhoid fever and chronic diarrhea, dangerous and obstinate diseases in civil practice, are much more so in army hospitals, and under the limited and necessarily insufficient means for their management at the command of the military practitioner. A typhoid tendency was noticeable in most

diseases admitted to hospital treatment, and they were all equally obstinate and intractable. The treatment was wholly supportive, and the prescription-books of the hospitals will show alcholic stimulants, quinine and beef tea to have been the principal articles prescribed. The nursing was as good as can be commanded in the army, but was, of course, far short of what it should have been. I cannot refrain from alluding in this connection to two noble and patriotic women from Indianapolis, who came here in December, and labored most incessantly for many weeks, alleviating much suffering, and doing an incalculable amount of good.

The hospitals are at present in most excellent condition, and in possession of everything that can add to the comfort and welfare of the sick. The wards are kept very clean, and the bedding clean and comfortable, the diet of proper kind and quality, and the nurses, under several months' instruction, attentive and skillful.

Mortality Statistics of the General Hospitals at the Military Post of Gallatin, Tenn., from December 1, 1862, *to March* 31, 1863. *By Wm. A. Brown, in charge of U. S. Hospital No. 5.*

Diseases.	Dec., '62.		Jan., '63.		Feb.		March.		Whole No. admitted from Dec. 1 to March 31.	Whole No. of deaths from Dec. 1 to March 31.
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.		
Zymotic Diseases.										
Typhoid fever	198	61	85	31	46	24	16	8	335	124
Typhus fever	.....	.....	2	.....	4	7	1	.....	7	7
Typho-malarial fever	.....	.....	1	.....	.....	.....	.....	.....	1	.....
Remittent fever	31	1	27	1	18	2	23	1	119	5
Intermittent: Quotidian	31	.....	3	.....	6	2	14	1	24	3
Intermittent: Tertian	15	.....	6	.....	.....	.....	.....	.....	21	.....
Intermittent: Congestive	4	.....	11	.....	.....	.....	.....	.....	15	.....
Diarrhœa: Acute	30	.....	.....	.....	3	.....	8	.....	41	.....
Diarrhœa: Chronic	123	21	98	18	31	22	26	6	298	67
Dysentery: Acute	4	.....	1	1	6	.....	.....	.....	11	1
Dysentery: Chronic	2	1	8	1	4	1	1	1	10	4
Erysipelas	58	12	22	7	21	8	8	4	109	31
Measles	207	30	14	3	4	8	2	2	227	43
Smallpox	.....	.....	.....	.....	3	.....	1	.....	4	.....
Diphtheria	.....	.....	.....	.....	.....	.....	4	2	4	2

Mortality Statistics—Continued.

Diseases.	Dec., '62.		Jan., '63.		Feb.		March.		Whole No. admitted from Dec. 1 to March 31.	Whole No. of deaths from Dec. 1 to March 31.
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.		
Mumps	10	.....	.....	.....	3	1	.....	.....	13	1
Influenza	.....	.....	1	.....	6	.....	.....	.....	7	.....
Syphilis	1	.....	.....	.....	1	.....	2	.....	4	.....
Gonorrhœa	9	.....	1	.....	.....	.....	.....	.....	10	.....
Orchitis (gonorrhœal)	.....	.....	2	.....	.....	.....	.....	.....	2	.....
Cachectic Diseases.										
Rheumatism { Acute	11	.....	3	.....	2	1	9	1	25	2
Rheumatism { Chronic	41	.....	13	1	14	.....	8	.....	76	1
Anæmia	136	1	75	9	42	1	19	3	281	14
Idiopathic dropsy	1	1	.....	.....	.....	.....	1	.....	2	1
Tumors	2	.....	.....	.....	1	.....	.....	.....	3	.....
Consumption	34	3	8	1	11	8	15	5	68	17
Scrofula	2	.....	.....	.....	.....	.....	1	.....	3	.....
Monorganic Diseases.										
Apoplexy (cerebral)	.....	.....	1	1	1	1	.....	.....	2	2
Epilepsy	.....	.....	3	1	2	.....	1	.....	6	1
Cerebritis	2	1	.....	.....	1	1	.....	.....	3	2
Spinal meningitis	1	.....	.....	.....	5	.....	2	.....	8	.....
Nostalgia	1	.....	.....	.....	.....	.....	.....	.....	1	.....
Neuralgia	4	.....	.....	.....	.....	.....	6	.....	10	.....
Paralysis	2	.....	2	1	2	.....	1	1	7	2
Tetanus	1	.....	.....	.....	1	.....	1	.....	3	.....
Conjunctivitis	2	.....	3	.....	3	.....	3	.....	11	.....
Earache	1	.....	.....	.....	1	.....	.....	.....	2	.....
Nervous deafness	1	.....	.....	.....	.....	.....	.....	.....	1	.....
Otorrhœa	1	.....	.....	.....	.....	.....	.....	.....	1	.....
Varicocele	1	.....	.....	.....	.....	.....	1	.....	2	.....
Varicose veins	.....	.....	.....	.....	.....	.....	1	.....	1	.....
Asthma	1	.....	1	.....	.....	.....	.....	.....	2	.....
Bronchitis { Acute	16	.....	13	2	9	1	4	1	42	4
Bronchitis { Chronic	1	.....	7	.....	10	.....	4	.....	22	.....
Laryngitis	.....	.....	2	.....	1	.....	2	.....	5	.....
Pneumonia	20	2	12	4	24	11	15	3	71	20
Pleuritis	40	8	2	.....	.....	.....	6	.....	48	8
Hemoptysis	1	.....	1	1	.....	.....	.....	.....	2	1
Colic	4	.....	.....	.....	.....	.....	1	.....	5	.....
Constipation	1	.....	.....	.....	.....	.....	1	.....	2	.....
Dropsy from hep. dis.	2	1	.....	.....	3	.....	2	.....	7	1
Dyspepsia	2	.....	.....	.....	.....	.....	3	.....	5	.....
Hernia { Fem.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hernia { Inguinal	1	.....	.....	.....	.....	.....	.....	.....	1	.....
Tonsilitis	6	.....	.....	.....	.....	.....	.....	.....	6	.....
Gastritis	2	.....	.....	.....	.....	.....	2	.....	4	.....
Hepatitis { Acute	3	.....	6	.....	1	2	4	1	14	3
Hepatitis { Chronic	6	.....	.....	.....	.....	.....	5	.....	11	.....
Jaundice	20	.....	14	2	7	.....	5	.....	46	2

Mortality Statistics—Continued.

DISEASES.	Dec., '62.		Jan., '63.		Feb.		March.		Whole No. admitted from Dec. 1 to March 31.	Whole No. of deaths from Dec. 1 to March 31.
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.		
Diabetes	8	.....	.....	.....	.....	.....	.....	.....	8	.....
Nephritis	.....	.....	3	.....	4	.....	2	1	9	1
Enteritis	.....	.....	1	1	2	.....	1	.....	4	1
Pericarditis	.....	.....	.....	.....	1	1	.....	.....	1	1
Endocarditis	.....	.....	.....	.....	3	.....	3	1	6	1
Cystitis	.....	.....	.....	.....	.....	.....	1	.....	1	.....
Scurvy	.....	.....	.....	.....	.....	.....	1	.....	1	.....
Abscess	4	.....	.....	.....	.....	.....	3	.....	7	.....
Piles	2	.....	3	.....	.....	.....	.....	.....	5	.....
Carbuncle	1	.....	.....	.....	.....	.....	.....	.....	1	.....
Valvular dis. of heart	.....	.....	1	.....	2	.....	3	1	6	1

GENERAL SUMMARY.

	Taken sick during the month.	Returned to duty.	Discharged.	Died.
December	1,250	330	3	149
January	458	376	90	203
February	335	163	188	105
March	250	271	107	44
Total	2,293	1,140	388	501

On Diphtheria with Laryngeal Complications. By J. R. BLACK, M. D., Surg. 113th Reg. O. V. I.

In simple exudite, with a gray patch on one or both tonsils, very simple treatment is often wholly adequate. But when the patches are ragged and extensive, or when the disease, after being apparently arrested, suddenly attacks the glottis and larynx, the import of the disease is generally acknowledged to be indeed serious. In a somewhat extensive experience with this affliction, death appears to me to be induced in two ways: 1st. By extension of the disease into the air passages, causing death precisely as in croup; and 2d. By toxemia, so affecting the blood as to almost wholly de-

stroy its red corpuscles. The former is the more rapid and common mode of death. It is also, therefore, one which the practitioner should especially guard against, be watchful of its invasion, and prompt in his measures to arrest and ameliorate. Like others with whom I have conversed, at one period of my life I looked upon this complication as one necessarily fatal; so telling the friends, and assuring them that this was my experience and that of my practitioner with whom I had had intercourse. But I feel glad to think that I am able to recede from that conclusion, and say that, though a diphtheric patient may have croupal cough, stridulous respiration, and a voice reduced to whispers, there yet is hope.

The first case, in which the line of treatment I now rely upon, and which by the way as well illustrates it as any other, was in the person of the daughter of J. T———n, Esq., of Licking Co. She was of delicate and strumous habit, about eight years of age, and residing in a district ordinarily deemed malarious. The disease had existed two days prior to my first visit, with considerable fever, and extension of patches on each side down from the tonsils as far as could be seen. Already there was slight huskiness of the voice, but no cough; the respiration being only somewhat heavy. An emetic of ipecac. ordered; the throat lightly but thoroughly touched with a probang saturated with nit. argenti-solution (grs. x to the ℥j.) Internally the chloride of potassa was given, containing an excess of hydrochloric acid. Under this treatment the febrile symptoms subsided, but the voice steadily lost its clearness, being reduced to whispers; the respiration, especially every evening, became exceedingly oppressed, the cough of the clear ringing metallic tone, which, as soon as it terminated, the child would drop asleep—the breathing, meantime, being so oppressive as to be heard from some distance outside of the house. In this extremity resort was had to an emetic of ipecacuanha every evening, or rather night—just as soon as the dispnœa became very embarrassing to the patient. The immediate effect was the ejection of large quantities of tough, glary mucous, and, later in the history of the case, of shreds of membrane. The relief to the patient was gen-

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erally well marked, the breathing and cough being relieved, though yet stertorous and metallic. During the day the cough was peculiarly harsh and rough, and oftentimes a distinct flapping of patches of membrane in the larynx could be heard. The sputa was frequently observed to be streaked with blood; the whole amount expectorated, however, being extremely limited. The disposition to cough was repressed by the child as much as possible, and every act of the kind appeared to give great pain in the larynx. The only means practicable for getting rid of the mucous, shreds of membrane, and its debris, that would accumulate there, was free and decided emesis. If the first did not act satisfactorily, the medicine was immediately repeated.

This was the only depressant used in treatment. Regarding the disease as distinctly asthenic, antiphlogistics and depurants are used, if used at all, rarely and with caution. As soon as the grade of fever becomes lowered, the tincture of iron is given three or four times per day; and when the action of the vital forces appears to lower rapidly, sulph. quinia, egg-nog and beef-tea are important adjuncts to treatment.

Under this line of treatment, cases apparently desperate may be conducted to a successful issue. For days, and in the above example, not for two weeks, could the patient be said to be clearly convalescent. Sixteen days elapsed before the voice began to throw off its huskiness, and the patient able to speak above a whisper. A peculiarity of this as well as of other like examples, was the very offensive nasal twang to the voice, which, in some instances, persisted for months. It appears to result from a want of integrity in the mucous surface, but more especially in deficient tonicity of the palatial tissues. Stimulating gargles, and the use of coal oil (an excellent agent) externally, soon produces a change for the better.

American and Foreign Intelligence.

[Communicated for the Boston Medical and Surgical Journal.]

The Senses of Smell and Taste. By MR. NORTON FOLSOM. An Essay to which the Prize of the Boylston Medical Society was awarded.

These senses are so mingled in action, that their separate offices are at first difficult to determine; and even the exact locality of the perceptions which constitute the two senses can hardly be pointed out without careful observation. We instinctively know that we smell oderiferous substances when they are presented to the nose, and that we taste sapid substances in the mouth, but more than this we can only derive from experiment.

The anatomy of the mouth and nose is briefly as follows: The mouth is an oblong cavity, with an arched roof, lined with mucous membrane, and opening into the pharynx through the arches of the palate. It contains the tongue, which is a muscular organ, capable of applying itself to any part of the mouth, and covered also with mucous membrane, which presents, on the dorsal aspect, three kinds of papillæ; first, the circumvallate, seven to fifteen in number, about one-fourth of an inch in diameter, soft, and arranged in the form of the letter V at the root of the organ; second, the fungiform, soft, but much smaller than the circumvallate, distributed irregularly over the dorsum, but much more numerous at the tip and edges; and third, the filiform, very minute, and quite hard and stiff, covering the whole upper surface, between the other papillæ. The epithelium of the circumvallate and fungiform varieties is very thin, that of the filiform quite thick and tough.

The hard palate is the roof of the mouth. Attached to its posterior border, and hanging like a vail or curtain between the mouth and pharynx, is the soft palate, which is muscular, and capable of being applied to the posterior wall of the pharynx, so as to entirely separate the cavities of the nose and the mouth.

The pharynx is the upper extremity of the œsophagus, and opens above into the posterior nares. These parts are all covered with mucous membrane, continuous with that of the mouth, and, like it, consisting of the laminated pavement-epithelium.

The nose consists of two pyramidial cavities, opening externally in front, and into the pharynx behind. They are entirely separated by a cartilaginous septum. Each cavity is partially divided by three spongy bones into three passages, called respectively the superior, middle, and inferior meatus. All these parts are covered with mucous membrane, which differs in character, however, in

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different localities. As far down as the middle spongy bone, the epithelium is of the "squamose cylinder"* variety, not ciliated, and the membrane is thick and brownish. Below this, and as far posteriorly as the orifice of the Eustachian tube, the epithelium is ciliated, exactly like that of the larynx and trachea, from which we might infer that this lower portion of the cavity is associated with the respiratory function rather than with the special sensation, as is indeed the case.

The nearly-closed cavities communicating with the nostrils, namely, the ethmodial cells, the sphenoidal and frontal sinuses, and the antrum of Highmore, have no connection with the sense of smell, as has been repeatedly demonstrated by experiment in regard to the two last mentioned.†

The nerves distributed to these organs are as follows:

To the nose,
1. The olfactory.
2. Branches of the first and second divisions of the trifacial.
3. Branches from the spheno-palatine ganglion of the sympathetic.

To the mouth,
1. Branches of the third division of the trifacial.
2. The glosso-pharyngeal.
3. The hypo-glossal.
4. Branches from the spheno-palatine and otic ganglions.

The olfactory nerves, within the cranium, arise from the base of the brain, and rest upon the cribriform plate of the ethmoid bone, which is immediately over the superior spongy bone. From it arise filaments, which descend upon the septum and upon the superior and middle spongy bones, and cannot be traced farther down than the non-ciliated mucous membrane extends. They differ from ordinary nerve-fibres in wanting the axis-cylinder, and in their gelatinous consistency and gray color. They terminate, according to late investigators, in club-shaped bodies, lying immediately beneath the epithelium, which are presumed to be ganglion-cells, like those which constitute the gray cerebral matter.‡

The nasal branches of the first and second divisions of the trifacial supply the mucous membrane of the nose throughout.

The spheno-palatine and otic ganglions send branches to the nasal mucous membrane, and also to the muscles of the soft palate.

The branches of the third division of the trifacial supply the mucous membrane of the mouth, and a large trunk called the gus-

* Kolliker. Human Microscopical Anatomy.

† J. Muller. Elements of Physiology.

‡ Oehl, as quoted in the Year Book of the New Sydenham Society for 1859.

Ecker, as quoted by Schroeder Van der Kolk in researches "on the Spinal Cord and Medulla Oblongata."

tatory nerve is distributed to the anterior two-thirds of the dorsum of the tongue, where its fibres enter the fungiform papillæ.

The glosso-pharyngeal nerve supples the muscles and mucous membrane of the pharynx and base of the tongue, and a branch passes forward to the circumvallate papillæ, where it forms a considerable plexus in each of them.

The hypo-glossal is distributed exclusively to the muscles of the tongue.

In a morphological point of view, the olfactory apparatus is to be considered as a cerebral ganglion, belonging, with the eye and the ear, to a series of three organs of special sense, which are disposed in the intervals between the four cranial vertebræ. Their nerves differ from ordinary nerves in having ganglion-cells, or gray matter, at their peripheral extremities, namely, the olfactory filaments of the retina, and the cochlear and vestiublar branches of the auditory nerve. This view is corroborated by the original development of these nerves or ganglions, which grow out from the cerebral substance, instead of being formed *in situ*, as all other nerves are.

In considering the functions of these various nerves, we may exclude the fibres from the sympathetic (believing them only to govern the nutrition of the parts, and to cause certain involuntary movements of the palate), and the hypo-glossal, which is the motor of the tongue.

When a substance to be tasted is placed in the mouth, we press it with the upper surface of the tongue against the palate, and thus force its particles in every direction. The saliva, poured in by its glands responsive to the stimulas, aids in dissolving and disseminating the particles over the mouth. When the substance reaches the fauces, and as it is swallowed, a current of air escapes from the glottis and carries any volatile portion to the posterior nares, where it is liable to affect the sense of smell. Plainly, therefore, in order to separate the two sensations, we must either shut off the cavity of the nose during the tasting, which can be done by most persons voluntarily by breathing through the mouth and applying the soft palate to the back of the pharynx, or we must interrupt the current of air through the nares, which can be done by holding the nose with the fingers.

We recognize two classes of impressions made by articles of food—one of *savors*, of which salt affords an example; the other of *flavors*, as that of vanilla. Most substances have both properties; thus a strawberry has an acid and a sweet taste, besides its own delicious flavor.

The distinction between these two classes, has not, indeed, been fully made by physiologists until of late; and still less has the fact been recognized, that *all flavors are perceived by the organ of smell only*, reducing the number of impressions which the organ of *taste* is capable of receiving the four only, viz., Sweet, Sour, Salt, and Bitter. This can, however, be easily and certainly de-

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monstrated. Let the nose be closed by the fingers, or let the posterior nares be shut off by the soft palate, and a solution of vanilla be taken into the mouth and swallowed. It cannot be distinguished from water. Soup, nutmeg, cheese, pineapple, and assafœtida are alike entirely *flavorless* under similar conditions, though the *ordinary sensibility* of the mucous membrane, and the perception of the four savors above mentioned, may enable us to apprehend certain *other* qualities which distinguish these substances. The common practice of holding a child's nose while it swallows disagreeable medicine, has its origin in this peculiar relation of these two senses.

We have now to consider the exact locality of the sensations produced by these four classes of stimuli. Experiments have been tried by various physiologists with entirely different results, which may be attributed to want of care and to not recognizing the fact that all *flavors* should be excluded from the investigation. All agree, however, in this—that, to be tasted, a substance must be brought to the sensitive part *in solution*, inasmuch as insoluble substances have no taste.

In the experiments performed by the writer, solutions of white sugar, tartaric acid, common salt, and sulphate of quinine, were carefully applied to various parts of the mouth and fauces by means of a camel's-hair pencil, pains being taken that no excess of fluid should be used, which might diffuse itself over other parts than that directly under observation. The following results were uniformly obtained on six different individuals, they all being unaware of the substances used in each experiment.

1st. The upper surface, tip, and edges of the tongue, as far back as to include the circumvallate papillæ, are the *only* parts concerned in the sense of taste; the hard and soft palate, tonsils, pharynx, lips, gums, and under surface of the tongue being entirely destitute of this sense.

2d. The circumvallate papillæ are far the most sensitive portion of the organ. They perceive at once very minute quantities of any one of the four substances used, and they are particularly sensitive to bitter. Irritation of these papillæ by pressure, or placing a drop of cold water on them, excites decided sensations of bitterness.

3d. The central portion of the dorsum of the tongue, to within half an inch of the edge, is the least sensitive portion. Substances are distinguished with difficulty, or not at all, when applied to it.

4th. The edges and tip of the tongue are quite sensitive, the edges becoming less so as we come forward. They recognize all the four classes of substances. The tip detects bitter with great difficulty, but is particularly sensitive to sweet. A sweet sensation, sometimes mingled with sour or salt, is produced by gently tapping it with any insipid soft substance.

The tongue posseses *ordinary sensibility* to a marked degree, es-

pecially at its tip, and in this way detects the size, shape, and texture of substances. It is in the same way that the qualities of pungency and astringency are perceived, which fact is proved by their being nearly as perceptible to the conjunctiva, or any other mucous membrane possessing ordinary sensibility, as to the mouth. A solution of tannin, applied to the circumvallate papillæ, gives the sensation of extreme bitterness, while at the tip it produces a slight sweetish taste, especially after it has been washed off by the saliva. These sensations are entirely distinct from the puckering, which, as just said, is perceived by other mucous membranes. The application of a solution of potassa gives nearly the same result, proving that there is no such thing as a distinct alkaline taste.

The results of the experiments of the present writer differ from those of a recent authority* who states that the hard and soft palate possess the sense of taste to a considerable degree. It is difficult to prevent fluids applied to these parts from trickling down upon the tongue; but if this is guarded against, no sensation is produced, even by a strong solution of sapid substance, except that of stimulation.

These facts make it almost certain that the gustatory branch of the trifacial, through the fungiform, and the anterior branch of the glosso-pharyngeal, through the circumvallate papillæ, share the office of tasting between them. This is also proved by cases where the sense of taste has been lost in the anterior part of the tongue, by the paralysis of the trifacial nerve, while it continued unimpaired at the root.†

We should hardly expect to find this similarity of action between two distinct nerves, especially as the whole of the trifacial, with the exception of the gustatory branch, is a nerve of ordinary sensation. But it is shown by recent microscopic investigation, that the sensitive root of the trifacial nerve receives certain fibres from the root of the glosso-pharyngeal in the substance of the medulla oblongata,‡ and it is at least *possible* that these fibres may enter the lower division, and be distributed with the gustatory branch, thus giving it the power of tasting.

These nerves do not differ in structure from the nerves of ordinary sensation, and yet would seem to perform the office of special sense. But tasting is, as we have seen, a much simpler action than at first appears, and should rather be classed with the functions of hunger, thirst, satiety, nausea, and the distress which is felt impelling us to breathe when respiration is suspended (functions performed by the pneumogastric), than with the higher and more complicated special senses. In connection with this, we may

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* Drielsma, as quoted in the Year Book of the New Sydenham Society for 1860.

† Todd and Bowman. Physiology.

‡ Schroeder Van der Kolk, in researches "on the Spinal Cord and Medulla Oblongata." New Sydenham Society. 1859.

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notice that, morphologically, the glosso-pharyngeal and pneumogastric belong to the same pair of cranial nerves.

Certain substances have been observed to produce sensations, painful or otherwise, when applied to perfectly sound teeth. As it has been ascertained that fluids are readily and rapidly absorbed by the tubules of the dental structure, and conveyed to the pulp cavity,* it is highly probable that the sensation is excited at the latter organ.

The sense of smell is entirely performed by the olfactory nerve. This is proved by the corresponding increase of the relative size of the nerve in those animals which are known to possess a particularly acute power of scent, and also by the fact that in paralysis of the trifacial the sense remains unimpaired. The branches of the trifacial which are distributed to the mucous membrane of the lower and anterior parts of the nasal cavity, endow it with a high degree of *common sensibility*, so as to guard the more delicate part of the organ from injury, by giving warning if we attempt to inhale any irritating vapor. This common sensibility appreciates the pungency of substances in the same way as in the case of any other mucous membrane. Many substances possess pungency besides odor, as ammonia and mustard, for example. These affect the conjunctiva almost as readily as the nose.

The organ of smell is affected by substances only when they are in the form of vapor; hence non-volatile substances have no smell. Vapors reach the organ in two ways. In the first place, a current of air may be drawn, by a forcible inspiration, so as to be directed by the external nose to the upper part of its cavity, and impinge upon the filaments of the olfactory nerve. If this air contains particles of any volatile substance, it gives rise to the sensation which we call *odor*. In the second place, if any volatile substance is taken into the mouth, and carried to the fauces, or swallowed, and a puff of air is allowed to escape from the larynx, it will be directed by the walls of the pharynx, so as to carry the particles of the substance directly to the upper part of the nares, where it produces what we describe as *flavor*. We unconsciously emit this current of air, immediately after swallowing, and when we are trying to taste anything. Thus we see that "scent and flavor are the same impression on the same nerve at the same part."†

Flavors are connected, in a great majority of instances, with food. This is the reason that the smell of roast meat so strongly excites the appetite of a hungry man. The exercise of the sense of taste is simultaneous with that of smell, in the act of eating, which accounts for the difficulty of distinguishing between them.

We can only classify these perceptions so far as to say that they are agreeable or disagreeable. Even this distinction cannot always be made; thus the faint smell of putrid urine closely resembles

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* Dr. Miel, a dentist, as quoted by Todd and Bowman.

† Herbert Mayo. The Nervous System and its Functions. 1842.

that of sandal-wood. What is offensive to one person may be pleasant to another. The desire for certain flavors is entirely acquired, and the infant will reject with loathing what may become its favorite food in after life. An agreeable flavor or odor sometimes becomes disagreeable by long continuance.

The odors of substances which are similar in other respects are generally alike, so that we may attempt to classify them according to the sources from which they are derived. The smells of plants are nearly, if not quite all, derived from essential oils. The various ethers have kindred odors.

Substances differ as to the intensity of their odor without reference to their volatility. Thus the smell of musk is more intense than that of ether.

In man, this sense only serves the purpose of giving him pleasure, and guides him to a slight extent in the choice of food; but with the lower animals, it not only becomes necessary in the detection and selection of food, but warns of the approach of friends or enemies, and performs numerous other duties, sometimes attaining a delicacy which renders it nearly equal in rank to sight and hearing. The hunting-dog and the antelope are well-known examples of this. The sexual appetite is frequently excited through this sense.

But in man, this sense is not commonly developed to its fullest possible extent. It is well known that the senses possess a certain sort of compensating power; that is, if one is lost, the others become more acute. The capabilities of this sense in the human being are well exemplified by the case of James Mitchell, who was blind, deaf and dumb from birth, and distinguished between persons principally by smell. It enabled him to detect the entrance of a stranger at once.*

It is recorded of the wine-tasters of Spain, that they can distinguish between five hundred different kinds of wine; and instances are familiar to every one, of the faculty of telling several kinds of wine, or several varieties of the same kind, many times in succession, with the eyes covered. A well-known gentleman of Boston is an example.

The tea-tasters to be found in great commercial cities acquire very nice discriminating powers, frequently determining the investment of large sums of money by merely tasting a specimen of tea.

Persons accustomed to the use of tobacco can at once distinguish the variety brought from Havana, and even, in some instances, the particular plantation from which it comes.

The French cultivate the olfactory sense to a much greater extent than most other nations, not only in the art of perfumery, but in cookery, which becomes almost a fine art with them; and there seems to be no reason why the imagination should not be reached through this organ as well as through the eye and the ear. The scent of the freshly-opened rose, or the flavor of the strawberry,

* Carpenter. Human Physiology.

has as valid a claim to the notice of the poet as the song of the lark, or the beauty of sunset. At all events, much pleasure and practical advantage might be gained by its systematic cultivation, even if we should never rival the powers of "the Monk of Prague, mentioned in the Journal of the Learned of the Year 1684."

"He not only knew different Persons by the Smell, but, what is much more singular, could, we are told, distinguish a chaste Woman, married or unmarried, from one that was not so. This Religious had begun to write a new Treatise on Odours, when he died, very much lamented by the Gentlemen who record this Story of him. For my Part, I do not know whether a Man of such Talents would not have been dangerous to Society."*

Clinical Lecture on Rheumatism. Delivered at St. George's Hospital. By HENRY WM. FULLER, M.D., Physician to the Hospital.

Gentlemen: In my last lecture we discussed the treatment of acute rheumatism, and I adduced examples from your own experience in the wards to prove that in the judicious employment of alkalies in full doses we have an efficient antidote to the rheumatic poison, and a sure protection against inflammation of the heart. It happens, however, that either from the neglect of this preventive treatment or from some time having been suffered to elapse before medical advice is sought, patients are not unfrequently attacked with endocarditis or pericarditis before they are admitted under our charge at the hospital, and it therefore becomes necessary that you should be fully prepared to encounter these formidable and often fatal complications of the disease.

I will take as a text for my remarks on this subject the case of E. K———, a weakly girl, aged eighteen, who was admitted on the 12th of December into Roseberry ward. She had been attacked with acute rheumatism two weeks prior to admission, and for some days had suffered severely from acute catching pain in the region of the heart.

On admission the skin was hot and perspiring; the hands and wrists were red, swollen, and exquisitely painful, and erythematous patches extended some distance up the right forearm; the tongue was furred, and greatly loaded; the bowels were reported open, and the urine clear, though high-colored and scanty; the pulse was 120, regular, but variable in strength; the respiration was very quick and shallow. There was great extension of the area of præcordial dullness, and the heart's sounds were almost inaudible; no exocardial or endocardial murmurs could be distinguished, and the firmest pressure with the stethoscope failed to produce one. Beef-tea was ordered as her diet; a large blister

* Le Cat. A Physical Essay on the Senses. 1750.

was placed over the region of the heart, and the following medicines were prescribed: Bicarbonate of potash, one drachm and a half; potassio-tartrate of soda, one drachm; tincture of opium, five minims; two ounces of acetate of ammonia draught; to be taken every four hours, with one scruple of citric acid. Three grains of calomel and one grain of opium, made into a pill, were ordered three times a day.

On the 14th the rheumatic pains were much relieved, the area of præcordial dullness had decreased, and the sounds of the heart were clearer and less distant, but still unaccompanied by murmur. The urine had become alkaline, so the mixture was repeated every six hours only, instead of every four hours. The pills were continued as before.

On the 15th exocardial friction-sound was audible for the first time. The urine continued alkaline, so the mixture was repeated only twice daily.

On the 18th the sounds of the heart were much clearer, and the sound of friction was beginning to decrease. The rheumatic pains had entirely ceased, and the urine was still alkaline. The mixture, therefore, was omitted, but the pills were continued as before.

On the 20th, the pulse, which had fallen to 80, had regained its steadiness, but it was very weak; the friction-sound still continued.

On the 27th the urine was pale and alkaline, although she had not taken any alkali since the 18th; there was slight fetor of the breath, the pulse was 88, and weak; the friction-sound was still audible, and the sounds of the heart were not so clear as they had been. The pill, therefore, was repeated, with the omission of two grains of calomel, and a blister was again applied to the region of the heart. Fish, also, was ordered for her dinner.

The symptoms now remained without much variation until the 1st of January, when she began to complain of cough and of a pain in the chest. On the 3d these symptoms were worse; there was considerable fever, the pulse having risen to 118; the face was flushed and the breathing hurried; she complained of pain in the left knee and ankle, and of increased pain in the chest; friction-sound was still heard over the heart, and bronchitic râles were audible over both sides of the chest; her pulse was weak and somewhat irregular; she was sweating profusely, the perspiration being faintly acid, and almost devoid of a rheumatic odour; and the urine was acid, but clear. A blister was again applied to the chest; a nitre draught, containing half a drachm of carbonate of potash, was given three times a day; the pill was continued, with the addition of two grains of calomel, and three ounces of sherry wine were ordered to be taken daily.

On the 5th the urine had become alkaline, the wine had not heated or excited her, and the pulse was still weak and irregular. The cinchona draught, with one scruple of bicarbonate of potash, was therefore substituted for the nitre draught, and the pills and wine were continued as before.

From this time she improved steadily. On the 8th the pills were omitted in consequence of slight tyalism. On the 10th the friction-sound was heard for the last time, and on the 22d she left the hospital, the action of the heart being regular, and its sounds clear and unaccompanied by murmur.

Now, this case affords a fair example of a severe attack of rheumatic pericarditis, and there are several points in relation to it to which I would direct your attention. In the first place, there was entire absence of exocardial murmur at the date of the patient's admission into the hospital, but nevertheless the existence of pericarditis was diagnosed, and treatment was adopted accordingly. You must have observed the same fact in other instances, and it is of importance that you should remember that mere absence of friction sound affords very imperfect evidence of the non-existence of pericarditis. The sound of friction implies the rubbing together of the two surfaces of the pericardium, roughened by the effusion of lymph, and, therefore, the presence of any large quantity of fluid in the pericardium necessarily puts a stop to the occurrence of friction by separating the two layers of the membrane. You will readily understand, then, that inasmuch as in certain cases effusion into the sac is very abundant, and takes place with great rapidity, you may happen not to see the patient, or may not examine his heart until after the sound of friction has ceased, in consequence of the occurrence of effusion. But shortness of breath, or a complaint of pain in the chest made by a patient suffering from rheumatic fever, should always arouse your suspicions as to the existence of pericarditis, and so also should marked irregularity in the force and frequency of the pulse. Under these, and, indeed, under all circumstances, it is your duty to examine carefully into the condition of the heart, and, in the absence of pleuritic and pulmonary disease, the presence of extended præcordial dullness and a muffled condition of the heart's sound is quite sufficient to render imperative the adoption of means to get rid of the effusion. In the case under consideration, as the area of præcordial dullness decreased, and the heart's sounds became clearer, the sound of friction became audible; but I would warn you not to suppose that your diagnosis has been wrong, simply because from first to last, you are unable to detect the presence of friction-sound. Extended præcordial dullness disappearing under treatment, and a muffling of the heart's sounds, which, after a time, is replaced by clearness of the sounds coincidently with the disappearance of the præcordial dullness, is quite sufficient to stamp the character of the disease. The fact that you have been unable to discover any friction sound during the absorption of the effused fluid, may be due to the rapidity with which adhesion has taken place, and the shortness of the time, therefore, for which the friction has continued, or it may be referable to the non effusion of lymph, on the anterior surface of the heart, and to the consequent non-transmission of the friction-sound to the parietes of the chest. In the case of W. G———, who was admitted into the Hope ward

on the 3d of April, there can be little doubt that this was the case; for although, as you will remember, he had all the general symptoms of pericarditis, and, with the exception of friction-sound, all the physical signs of the disease, and although under the influence of blisters, and calomel and opium, the symptoms all subsided, and the sounds of the heart became clear, yet from first to last no friction-sound was heard, although the heart was carefully examined daily.

The treatment of rheumatic pericarditis is a subject on which various opinions have been expressed, and I would therefore direct your attention to certain points in connection with it. Theoretically, the objects to be attained are—1st, the removal of the cause of irritation which first excites and subsequently keeps up the pericardial inflammation; 2d, the subjugation of the mischief which has been set up; 3d, the mitigation of its evil effects by inducing absorption of the fluid or other products which are effused into the pericardial sac. The first object is to be compassed by the administration of alkalies, which, as I have shown you, have the power of preventing the accession of cardiac inflammation, and which also, by eliminating the rheumatic poison from the blood, do much towards removing the articular, cardiac, and other inflammations which are due to the presence of that poison in the system. The second and third objects are to be secured by the use of bloodletting, counter-irritation, and the administration of calomel, opium, and other remedies. In the case of E. K——, and in many other instances which have come under your observation in the wards, you have seen the plan of treatment I usually adopt. It is founded on the theoretical considerations just alluded to, and has proved eminently successful. The mixed alkalies are administered, calomel is pushed until the gums are slightly touched, and opium is given with it in quantity sufficient not only to restrain its purgative action, but to subdue the irritability of the system. At the outset of the disease, if the heart's action is very turbulent, a few leeches may be applied to the præcordial region, or a few ounces of blood may be drawn from the arm; but in the great majority of cases depletion is unnecessary if the alkalies are properly administered, and in most instances it proves mischievous by depressing the patient, and thus preventing the setting up of those actions whereby absorption of the inflammatory products and adhesion of the two layers of the pericardial membrane are effected. Blisters are serviceable, even from the first, but their efficacy is displayed so much more strikingly when liquid effusion has taken place into the pericardium, that I seldom have recourse to their assistance until the existence of effusion is unequivocally declared. In the case of E. K—— a large amount of fluid existed in the pericardium at the date of her admission into the hospital, and the relief afforded by the blister was manifest in the increased clearness of the sounds of the heart, and the occurrence of pericardial friction, which within three days resulted from the two roughened surfaces

of the pericardial membrane having come into apposition in consequence of absorption of the effused fluid.

The importance of maintaining the strength of the patient whilst measures are being adopted for the relief of the local inflammation is well illustrated by the case of E. K——. Up to a certain point all seemed going on well. The rheumatic pains subsided; the area of præcordial dullness gradually diminished; the heart's sounds became clearer; and, in short, all the symptoms betokened the disappearance of the rheumatism, and the absorption of the fluid products of the pericardial inflammation. Nevertheless, the friction-sound continued, adhesion of the two layers of the inflamed membrane did not occur, and recovery did not take place. The explanation of this is to be found in the feeble condition of the patient. Naturally a weakly person, she had undergone two weeks of severe suffering before her admission to the hospital, and although the measures then adopted for her relief very speedily caused a mitigation of her pain, and relieved the heart of the large amount of fluid which was oppressing it, it was impossible at once to impart that tone to the system which is essential to the rapid organization of effused lymph. The feeble pulse, the alkalinity of the urine, which continued notwithstanding the omission of the alkalies, and the profuse and scarcely acid perspiration which ensued, were the exponents of the cause which prevented the organization of the effused lymph. The exhaustion which those symptoms indicated was the true cause of the non-cessation of friction, and is usually the origin of the untoward symptoms by which death in pericarditis is preceded. Accordingly, when these symptoms fully declared themselves, and it became evident that, notwithstanding the absorption of the more fluid parts of the exudation, adhesion would not take place between the two layers of the pericardium, I deemed it necessary to endeavor to support her, and thus enable the reparative process to take place. From the first I had given her strong beef-tea; on the 27th I ordered her fish for dinner; on January 3d wine was prescribed; and on the 5th I gave her the cinchona draught, although up to this time there had been no diminution in the sound of friction. Strange remedies these, you will say, to subdue an acute serous inflammation! In truth they would be very strange remedies for such a purpose, but that was not the object for which they were administered. Blisters, and calomel and opium, and alkalies were the agents employed for that purpose; the food, the stimulant, and the bark were only given to support the general strength, and enable these agents to do their work. And right well they effected the object in view. From the time the bark and wine were administered the symptoms rapidly abated; the pulse regained its force and steadiness; the profuse, enfeebling perspiration ceased, and the friction-sound diminished, and soon disappeared altogether. Here, then, is an important practical point for your consideration. None of the functions of the body, and none of the actions which are necessary to the

reparation of the tissues, can go on properly in a person enfeebled beyond a certain point, and in the treatment of pericarditis, as of all other inflammatory diseases, it is essential to uphold the patient's strength directly you obtain evidence of constitutional exhaustion.—*Med. News and Library.*

Letter from Prof. Charles A. Lee.

WINES, AND THE WINE-GROWING COUNTRIES.

COBLENTZ ON THE RHINE, Sept. 21, 1862.

I am strongly tempted to forego medical subjects, hospitals, mineral waters, lunatic asylums, cretins, climate, etc., and expatiate upon the fascinating scenery of this renowned river; and I would begin by saying that its banks present every variety of wild and picturesque rocks, thick forests, and fertile plains; vineyards gently sloping or perched among lofty crags, where industry has won a domain among the fortresses of nature; whose banks are ornamented with populous cities, flourishing towns and villages, castles and ruins, with which a thousand legends are connected; with beautiful and romantic walls, and salutary mineral springs; and whose waters offer choice fish, as its banks produce the choicest wines. I have traced its course from the Swiss canton of the Grisons, where 241 glaciers contribute to supply its sources, and 56 romantic waterfalls diversify the scenery, down to this city, and have not ceased to admire its beauties at every step. But all this I forego, and remembering that I am writing only for medical men, I must confine myself to subjects in which they are more especially interested. I shall therefore speak at present of the Rhine wines, the culture of the vine, and the vintage in this region, together with other matters connected with the juice of the grape, believing that more definite information on these points is still a desideratum.

From Bonn to Coblentz, and from this city to Mayence, the country is covered with vineyards, although to the north of this the vines are of little comparative note. The latitude of this city is nearly 51°, corresponding with the northern shores of Newfoundland, or the southern borders of Hudson's Bay: and yet the finest and most aromatic wines of the world are the product of this favored region. Nowhere, indeed, is the fondness for vine cultivation more evident in every grade and class of farmers than in the vine districts bordering on this river and its tributaries. The humblest peasant has his little vineyard. Every accessible spot on the declivities and among the rocks and precipices with an auspicious aspect, is decorated with the favorite plant. Owing to the sloping banks, from Mayence to Bonn, the vineyards on either side of the Rhine are in full view, and in no other country on the globe are they seen to such advantage. Here is Erbach enthroned among vines; here the Rheingau, with its famed Johannisberg seated on

a crescent hill of red soil, with every cranny cultivated that admits of vegetation; here are Mittleheim, Geisenheim, and Dudenheim, the last with its strong fine-bodied wine, the grapes basking in their promontory of rock in the warm summer sun, imbibing its generous heat from dawn to setting; and then again on the other side is old Bingen, celebrated in song, delightful, sober, majestic, adorned on every side by its terraces of vines; the summits of the lofty hills and crags everywhere crowned with feudal relics or monastic remains. At Coblentz the soil first becomes particularly well adapted for the cultivation of the grape, though the right bank of the river is most noted for its wines. The *Rheingau*, the most celebrated of all the wine-growing districts, consists of an area of ten miles in length by four in breadth, which has been known for many centuries for the excellent quality of its produce. The valley of the Rhine, taking from Mayence a western and north-western course, exposes it to the warm south-west winds, which have a very salutary effect on the maturity of the grape. The Riessling, a small white grape, is the one chiefly cultivated here; and although not well adapted for table, has a finer and more aromatic *bouquet*, it is said, than any other grape known. It is in the centre of this district, on a gentle eminence on the right bank of the Rhine, and in plain view from the river, that the celebrated Johannisberg vineyard is situated. This small domain of only forty acres in extent, yields on an average about 9600 gallons of white wine annually, selling in 1859 at public sale, for 60,000 dollars. I am told that four qualities of wine are produced from this vineyard, the best selling for over seven dollars per bottle, or twelve thousand florins ($6000) per tun. The price of the different qualities varies from $1.50 to $7 per bottle. It is sometimes sold, however, by the cask, especially in bad years. The cellars or vaults are very extensive, but it is difficult to gain admittance to them. There are no gardens attached to the Chateau, as the ground is too valuable, nor are there any trees, except on the north side of the house, where is a sort of wilderness of limited extent. The best wine, I am informed, is the product of vines growing close under the Chateau, and, indeed, partly over the cellars. The rare excellence of the wines of this district is generally accounted for from the advantageous exposure to the direct rays of the sun, and the peculiar qualities of the slaty soil, which retains the heat of the sun's rays, so necessary for bringing the grape to maturity. This is proved by the fact already stated, that the best wines are confined to the north bank of the river, the valley being completely sheltered from north and east winds by the intervening barrier of mountains. A good deal, however, is evidently owing to the careful management of the vines, and the great care bestowed on the vintage. The grapes, for instance, are allowed to remain on the vines as long as they can hold together, and the vintage never takes place till the grapes are more than perfectly mature. The vineyard is divided into small compartments, the produce of each of which is put into separate casks, and even in the best years there is a difference in

the value of different casks. In bad years the wine never goes into the cellars, but sells at once for what it will fetch. The best of the Rhine wines, after being fermented in casks, are repeatedly racked, and then suffered to remain for years in large reservoirs to acquire perfection by time. These huge casks contain 350 tuns. The Germans have always held that wines mellow best in large vessels, hence the celebrated Heidelberg tun, 31 feet long by 21 high, and holding 600 hogsheads. Hence, also, the enormous tuns of Tübingen, Gruningen, and Konigstein, the last of which contains 3709 hogsheads. All these tuns were formerly kept carefully filled. Some of these I have examined, but could not ascertain that they had been filled for many years past. I have mentioned the Riessling grape, but there are also the Klimberger, the Traminer, and the small Orleans variety, all of which are cultivated in the Rheingau and produce excellent wines. The laborers are strictly forbidden to eat any grapes under the penalty of the loss of future employment, and during the vintage they are allowed double wages. The common wine-press is used. The gathering of the grapes is not completed at once, none but the ripest being picked, so that there are as many as three or four distinct pickings. Dry and fine weather is deemed indispensable for the vintage. For the choicest wines the ripest of the best kinds of grapes, grown in the most favorable situations, are cut off with small scissors, and after lying twenty-four hours are pressed separate from the rest.

The Rheingau is divided into the Upper and Lower Cantons, relating to the position of the vineyards near the summits of the hills, or on the margin of the river. The high grounds produce the strongest wines, while that of the lower ground has an earthy taste —the intermediate being considered the best and most wholesome, though much depends on the season. The Johannisberg and Steinberg rank first among the Rhine wines, and are on an equal footing as regards flavor and bouquet. Next to these follow Rudesheim, Markobrunner, and Rothesberg, all of which possess much body and aroma. The Hockheim grows on the banks of the Maine near Frankfort, and ranks with the best of the second class Rhine wines. Of the inferior wines the Erbach and Hattenheim are the best. But the lighter wines are apt to be hard and rather acid as table wines. The Laubenheim and Neirstein, from the Palatinate above Mayence, and the delicately-flavored Moselle, are much preferred to them as table wines in Germany. The best red wine is the Asmanshausen, produced from vines originally brought from Burgundy. But the vine chiefly cultivated on the Rhine is the Riessling. All German wines have been called *Hock*, but this name is derived from and properly belongs to that produced at Hockheim near Frankfort, above mentioned, which stands in the midst of vineyards, on elevated ground, and exposed to the full blaze of the sun. I found that the vineyard which produces the Hockheimer of the first growth is only about eight acres in extent, well sheltered from the northerly winds, on the side of a hill behind the deanery. But the average summer heat here is not sufficiently great, oftener

than once in five or six years, to perfect a vintage of superior quality. The relative proportions of the different elements which enter into the composition of grape-juice, as sugar, albumen, gluten, pectine, gum, coloring matter, tannin, volatile oil, bitartrate of potash, etc., are so modified by the nature of the vine, quality of soil, and especially the heat of the climate, that there are few crops so uncertain as that of the vine, to say nothing of the *oinium* or other diseases which have of late years attacked this plant. The present season promises to be one of the most productive ever known, the vines everywhere being loaded with fruit. It is a well known fact in this region that wines of equal flavor and equal quality are rarely produced in two consecutive years, while in districts like this, on the very verge of the protective limits of the vine, its produce is still more variable and inconstant. I find the limits to the culture of the vine in Europe are generally fixed where the mean temperature is from 50° to 52° F., and I believe no drinkable wine can be produced under a colder climate. But the isothermal line of 50° which passes through Belgium in lat. 51°, in our country passes near Boston in lat. 42° 30′.

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Coblentz on the Rhine, Sept. 21, 1852.

In Europe, the favorite climate of the vine is between latitude 36° and 48°, that is between the isothermal lines of 62° and 47° 50′, provided the winter line is not below 33°, nor the summer under 66 or 68°. Such is the case in Europe to lat. 50°, and in the United States to lat. 40°, but on our Pacific coast the requisite temperature for maturing the grape is found as high as Fort Vancouver (in the latitude of Montreal), where the fig, citron, orange, lemon, pomegranate, and cotton plant, ought also to flourish. I believe it has been ascertained by Humboldt that the mean heat of the edge of vegetation of the vine must be at least 59° F., and that of the summer from 65 to 67°, and that any country which has not these climatic conditions cannot produce fully ripened grapes or drinkable wine. It is a singular fact that on the table lands of South America where the mean temperature is from 62 to 66°, although the vine may grow and flourish, the grape does not mature, because the temperature is too low and nearly uniform. In no equatorial country can good wine be made where the constant temperature is not, at least, 68° F. The most remarkable vintages of the Rhine wines, I am informed, were in the years 1811 (when the celebrated "*Comet*" wine was produced), 1822, 1834, and 1857, and the mean temperature of these summers was 68° F. One of the poorest years for wine was in 1833, when the mean temperature of the summer was only 63° F. We shall, however, err, if we suppose that the strongest wine always corresponds with the hottest summer; for, in addition to this, it appears that a mild autumn is an essential condition to the ripening of the

grapes. Thus in 1834 and 1811, which were remarkable over Europe for the quantity and excellence of their wines, the mean temperature of September and October was as high as 62° F., while the mean temperature of the same months in 1833 and other bad years was only about 50° F. I make these remarks to show how uncertain the cultivation of the grape must be in our northern and perhaps mean and middle States, where the conditions for maturing the fruit must often be absent, but in southern Ohio, Illinois, and our southern and southwestern States generally, as well as on the Pacific coast, all the necessary climatic conditions will be found for perfectly maturing the grape, and the production of excellent wines.

The chief defects of wine are wanting strength and being too acid. Both are owing to want of maturity in the grapes. There is an excess of cream of tartar and free vegetable acids, which disappear as the grape fully ripens, and are replaced by sugar, and this deficiency of sugar in the must is supplied both in Germany and France by adding a quantity of artificial grape sugar, prepared from starch. The quantity of acid is small in warm climates where the grape fully ripens; here the sugar greatly predominates, so that the *ferment* or azotized principle of the must is insufficient for complete fermentation, when we have sweet wines, but if the ferment be sufficient we have strong alcoholic wines, as those of Madeira. These principles are well understood here on the Rhine, where it is a common practice to add sugar and water to the grape juice in process of fermentation in order to quadruple the quantity without deteriorating the quality of the article produced. The grapes are at first subjected to gentle pressure only, by which a portion of the juice is extracted; then sugar and water are abundantly added to the husks, in order to get the largest possible quantity of wine out of a given quantity of grapes. But the quality is, of course, greatly deteriorated. I found this practice almost universal in the wine districts of France, and was informed that the *vin ordinaire*, and the wine generally met with in the cabarets, was produced in this manner. It is well known that the best Rhine and Moselle wines rarely have any brandy added to them, and that they will keep for a century at least without any alcoholic addition, and yet their alcoholic strength, according to the test in use at the custom house in London, seldom exceeds 18 per cent. upon the common, and 21 per cent. upon the best descriptions, and yet when going through the wine vaults at the London docks, I was told by one of the largest dealers, that he uniformly added 33 per cent. of brandy to his sherry wines, to adapt them to the taste of the English wine drinkers, who seem to relish only the strong fiery wines.

To show not less the capacity of the human stomach, and the toleration of the pure Rhine wines, I may mention that I have known two gentlemen drink, at a single sitting of six hours, twelve bottles of the best quality, without any apparent excitement or ill-effect whatever. Port wine used in England is known to be re-

inforced before it leaves Portugal by one-fifth of strong brandy, besides what is added to it in the London docks; which we may presume to be equal to that added to sherry, viz: 33 per cent.! I am glad, however, to observe that the lighter wines of France and Germany are becoming much more extensively used than they were when I was last in England, twelve years ago; so that the consumption of French wines has now reached 25 per cent., and the Rhenish wine over 3 per cent. of the whole amount imported. Still, most of the old English wine-drinkers cling to the use of the strong alcoholic wines, to which they have been so long accustomed; and there is little reason to expect that the *pure juice of the grape* will speedily, if ever, supplant the national drink of the English, viz: *malt liquors*. I think the German wines possess a distinct character from all other wines; being generous (as it is called), drier than the French, finely flavored, and enduring age beyond any other wines whatever. Of late years also they have greatly improved in quality by the great attention paid to their growth, and better management of the vintage. Wine-making has become more of an art or rather science, and the best chemists of the country, like Liebig, Boussingault, etc., have contributed their efforts to aid in its advancement; so that there are great emulation and competition in the different wine districts, and the wines show a corresponding excellence. For instance, there is now a great rivalry between the two vineyards of Johannesberg and Steinberg, so that some years the produce of the latter brings a higher price than that of the former. Five dollars per bottle at the cellars is not an unusual price for it. So the Rudesheimerberg, the Steinberger, and the Graefenberg, are held in nearly equal estimation by wine connoisseurs; and the vineyards of Roth, Koningsbach, and Marcobrunn, do not lag far behind. The oldest wine I have met with is of the vintage of 1748, which is still offered to purchasers; though the wines of 1783, yet on sale, bear the highest character of any of the wines of the last century. The opinion, that the nature of any particular wine depends on or is improved by its great age, is not often entertained in this region. The wine is accordingly not kept out of the market so long as formerly. I am sure I cannot explain why it is, that, while much stronger southern wines suffer from age after a certain number of years, even in bottle, these Rhine wines, containing far less spirit, undergo no deterioration by age, but are, if anything, improved; so that the Steinwein of 1748 brought, in 1832, 350 dollars for thirty gallons. I found it a very common opinion in England that the Rhine and Moselle wines are more acid than the white wines of France; but I believe it to be a mistake, for the French sulphur their wine casks to prevent the acetous fermentation, which is not practised, as it is not necessary, here; and inasmuch as acids are supposed to generate gout, English physicians forbid their gouty physicians to drink the Rhenish wines, which is certainly a mistake, as the gout is a disease rarely, if ever, known on the banks of the Rhine, where no other wine scarcely is drunk. This is also

the testimony of the physicians of Mayence, who say that the Rhine wines are very salutary, and even medicinal, containing less acid than any others, and are never saturated with brandy, as the French white wines are. Were I to recommend any foreign wine, it would be the highly flavored Moselle, which is now becoming highly fashionable at the first tables in London, and which, when iced, constitutes a most grateful and not unwholesome drink in summer. It is also a cheap wine, costing at Coblentz or Mayence, less than one dollar and a half per imperial gallon. It contains, I believe, more *œnanthic ether* (that volatile principle which imparts that smell and taste which distinguish wines from all other fermented liquids) than any other wine; though the French wines have it in a marked degree, particularly those from the Orleans grape. Tropical wines, it is well known, have no bouquet whatever.

In regard to *sparkling wines*, I am told that they began first to be manufactured in Germany about forty years ago from the inferior Neckar grape, and that the process has been continued from that day to the present with increasing success; so that at this time they compete to a considerable extent with genuine Champagne. There are now manufactories of this wine at Hockheim, Mayence, and Coblentz. I have good reason to know that large quantities of inferior wine, which would not readily find a sale in its unsophisticated state, are thus got rid of, the sweetness and effervescence, as in the case of our Champagne made of Newark cider, concealing and masking the real inferiority of the wine. It is maintained here, by dealers in the article at least, that if the best kind of grapes are selected, and the same process pursued as in Champagne, a most excellent wine is the result, and quite equal, every way, to the best Champagne, and greatly superior to most that goes under that name. But the grapes, I believe, are taken from a common growth, and the effervescence produced by the carbonic acid gas in the process of fermentation. The best judges, however, say, that the experiment is a failure; that, although the effervescence of a Champagne wine may be thus obtained, yet the delicious flavor which characterizes that wine will be always wanting, as that flavor is derived from the soil, and can be supplied by no art. I know that large quantities of the lowest class of German wines are imported into France for the purpose of being converted into Champagne, and that fictitious sparkling Moselle is now extensively manufactured in France, labels being used bearing the names of patented German wines. The truth is, that Champagne wines, so called, are made in Germany, merely to get rid of the poorer and unsalable classes of wines, and this is confirmed by the little estimation in which they are held in the country of their manufacture; for we cannot suppose it to be fashion or prejudice which causes a preference to be given to French Champagne. Else, why are these sparkling wines designated by French names, and why employ the labels, brands, and mode of packing in vogue among the French manufacturers? If the wine could stand on its own merits,

these impositions, I take it, would not be necessary. These wines cost here about seventy-five to ninty cents per bottle, while the best French Champagne (Cliquot or Moet brand) costs about double the price. In 1861 the sale of sparkling Hock and Moselle was estimated at about one million of bottles, which is about one-tenth of the sale of French Champagne. But this is too extensive a subject for a single letter.—*Amer. Med. Times.*

Three Cases of Strangulated Hernia, in which the Operation was performed without opening the Sac. By HENRY B. SANDS, M. D., Surgeon to St. Luke's Hospital.

CASE I.—*Strangulated Femoral Hernia.—Operation without opening the Sac.—Recovery.*—On October 11th, 1862, I met Dr. S. S. Purple, in consultation, to see a lady residing in this city, who had suffered with the usual symptoms of strangulated hernia for about thirty hours. The patient was 25 years of age, married, and in good general health. She noticed, a little more than two years ago, a small swelling in her right groin, concerning the origin of which she could give no explanation. At first occasioning no inconvenience, it was soon observed that at times the swelling would suddenly enlarge, the increase in size being accompanied by pain and vomiting, and that after a longer or shorter interval the pain and vomiting would disappear—their disappearance being coincident with the subsidence of the tumor. She had sought surgical aid but once before, when Dr. Purple succeeded in returning the protrusion by the employment of the taxis. The present attack began on the day previous to my visit, shortly after the patient had risen from bed. Whilst dressing herself she was taken with pain, and soon became aware that the tumor had descended. At the same time, according to her statement, she had a tolerably free evacuation from the bowels. The pain then grew more severe, being most intense in the neighborhood of the umbilicus, and vomiting of a persistent character soon followed. These symptoms continued, without amelioration, up to the time I first saw her. The attacks of vomiting were then taking place at intervals of from fifteen minutes to half an hour. The matters vomited were greenish and watery, but not stercoraceous. Pulse 90; skin warm and moist; countenance pale, and expressive of suffering. A tumor, about as large as a hen's egg, was situated in the right groin, immediately over Poupart's ligament. It was tense, elastic, resonant on percussion, and not very painful. It lay over the inner half of Poupart's ligament, was freely movable above and externally, but firmly fixed at the situation of the femoral ring. Dr. Purple had already made a careful and patient attempt at reduction, but without the use of an anæsthetic. It was now decided to render the patient insensible, and then to act as circumstances might require. Ether having been administered, the taxis was

again employed, but without success, and I accordingly proceeded to relieve the stricture by means of the knife. I made a single, straight incision, about two inches long, on the inner side of the tumor, and soon arrived at the level of the sac, which was in good condition, and evidently without any sign of gangrene. Leaving the sac unopened, the forefinger of the left hand was passed with care up to the situation of the femoral ring, into which I introduced a hernia knife, and, directing the edge of the instrument, in the usual manner, upwards and inwards, made a limited division of tightly constricting tendinous fibres. An assistant having then elevated the patient's pelvis by raising the lower extremities (an expedient which, in my opinion, greatly facilitates the reduction of hernial tumors), I succeeded, by very slight manipulation, in pushing back a knuckle of protruded intestine, which returned to the abdominal cavity with a gurgling noise. The sac then felt as though it contained a small piece of omentum, adherent to its inner surface, but it was deemed best to leave this undisturbed, there being no reasonable doubt that all strangulation was removed. There was hardly any bleeding during the operation, which was done with comparative ease, and without any such disturbance of the tissues as usually happens in the ordinary procedure where the sac is laid open. The wound was closed with silver sutures, and dressed with adhesive straps, a compress of lint, and a spica bandage.

Oct. 14th.—Every thing has gone on well since the operation. The vomiting and pain ceased almost immediately, and small doses of opium produced quiet, refreshing sleep. Yesterday Dr. Purple prescribed a tablespoonful of castor oil, which in a few hours caused a healthy-looking fecal evacuation. Wound healing well.

Oct. 18th.—Patient well. The wound has healed completely by adhesion, and the dressings have all been removed.

Case II.—*Strangulated Femoral Hernia.—Operation without opening the Sac.—Recovery, with Fecal Fistula.*—On February 15th, 1863, I saw Mrs. J——, of this city, in consultation with Drs. Van Antwerp and Vosburgh. The patient was about 60 years of age, and had for many years been in feeble health. She stated that she had had a rupture in the left groin during the past nine years, which was probably caused by overwork, and for which she had never worn a truss. It had at times given her a good deal of trouble, by the pain and vomiting which accompanied its descent; she was almost always able, however, to effect a reduction without assistance, although sometimes four or five hours would elapse before her efforts proved successful. Soon after getting out of bed on the 13th inst. she felt the tumor descend, and was seized with the desire to go to stool, where she had two evacuations from the bowels. Pain and vomiting then set in, and continued through the day, the whole of which she spent in forcible but fruitless attempts to replace the protruding organs. On the 14th, the symptoms becoming more severe, she sent for her attending physician, Dr. Van Antwerp, who, with the help of Dr. Vosburgh, made sev-

eral unsuccessful attempts at reduction. At the time of my visit, on the 15th inst., her condition was as follows: Pulse 104, small and feeble; skin cool, and covered with moisture; abdomen somewhat tense, but not painful, except in the neighborhood of the tumor; matters vomited thin and yellowish, but without stercoraceous odor. The hernia was situated over Poupart's ligament, covering its inner two-thirds; it was hemispherical in shape, and not distinctly defined, the skin and subcutaneous tissues being inflamed and œdematous. Pressure gave acute pain, but caused no change in its position, which was fixed and immovable. The patient having been put under the influence of ether, I made an incision, as in the former case, on the inner side of the tumor, and found the tissues between the integument and the sac considerably thickened, and matted together into a mass, in which the so-called "coverings" of the sac were not distinguishable. The parts were also unusually vascular, several vessels requiring the ligature before the sac was exposed. This having been accomplished, and the sac appearing to be healthy, I determined, if possible, to leave it intact, and to relieve the stricture by external division. I found the femoral ring tolerably tight, and divided Gimbernat's ligament with a hernia knife, after which I made an attempt at reduction, and failed. I then drew the sac downwards, so as to get a view of its neck, across which several short, glistening, fibrous bands could be seen running. These I cut through carefully, being cautious not to open the sac, and as soon as this had been done I was able to return the intestine, which slipped up with a gurgling noise. A small portion of omentum remained unreduced, and could be felt adherent to the sac; this was left without further interference, and the wound in the integument brought together with sutures and adhesive strap, over which were applied a compress and spica bandage. It is worthy of remark that, in cutting the stricture, the obturator artery, which had an abnormal origin, and ran over the neck of the sac, was accidentally divided by the hernia knife; it was easily secured by the ligature, however, after having drawn up the tendinous margin of the femoral ring, so as to expose the divided ends, both of which had to be tied before the hemorrhage was controlled. After the operation the patient rallied slowly, and during the first week the progress of the case seemed favorable; there were no signs of peritonitis; the bowels moved on the sixth day, and the greater part of the wound healed by the first intention. On the ninth day, however, a small quantity of yellowish fluid made its appearance at the wound, having a fecal odor, and on the following day this grew more abundant, its character being unmistakable. An attempt was made to limit the discharge by making firm pressure over the wound, but this was not well borne, and for some days a very considerable quantity of feces passed out at the artificial opening. Meanwhile the bowels continued to act with almost natural regularity, and the patient's general condition, though uncomfortable, did not appear to be critical. The discharge began to diminish rapidly about three weeks after the operation,

and is now so small as to be scarcely perceived, the opening having been reduced to a narrow fistulous track.

Case III.—*Strangulated Inguinal Hernia, complicated with an Undescended Testis.—Operation without opening the Sac.—Recovery.*—In the afternoon of Wednesday, February 25, 1863, I visited Thomas ——, at Rahway, New Jersey, where I met Drs. Abernethy and Drake, of Rahway, and Mr. Marsh, the truss maker, of New York. The patient was a slender, delicate-looking lad, 16 years of age. He had for several years been subject to a small hernia on the right side, which, however, had never given him any trouble until the Sunday previous, when, after a fall, the swelling became suddenly larger, and did not disappear as usual. The ordinary symptoms, pain, vomiting, and constipation, followed, and on Monday he was seen by his attending physician, Dr. Abernethy, who administered chloroform, and with the assistance of Mr. Marsh tried to reduce the tumor. Failing in this, and the symptoms not being very urgent, various external remedies were applied, and active interference delayed until Wednesday, when, signs of commencing peritonitis showing themselves in addition to the other symptoms, it was thought best to seek relief by surgical means. At the time of my visit he had the usual aspect of a person suffering from strangulated hernia, but was in a tolerably good condition, and without any signs of prostration. The abdomen was somewhat tense and tympanitic, and there was pain, referred chiefly to the region of the umbilicus. The hernial swelling, situated on the right side, was about as large as a lemon, and evidently inguinal; it was quite tense, elastic, and resonant on percussion. On the same side it was noticed that the testicle had not descended into the scrotal cavity, and upon examining the hernial tumor, it was found that pressure on its posterior part caused the sickening pain peculiar to that organ, the outline of which, however, could neither be seen nor felt. Ether having been administered, I operated in the following manner: A single straight incision was carried over the middle of the tumor, extending from just above its neck downwards for about three inches. Having, by careful dissection, exposed the tendon of the external oblique muscle, I cut through it so as to lay open the whole length of the inguinal canal, this step of the operation evidently affording great relief to the constriction. Failing to effect reduction by this means, however, I drew down the sac so as to expose its neck, when several circular fibrous bands came into view, consisting apparently of thickened sub-serous cellular tissue. The division of these with a scalpel gave complete relief to the strangulation, the gentlest manipulation sufficing to return the contents of the sac, behind which, as it lay loose and flabby in the wound, an oval body could be felt, evidently the undescended testis, which had been arrested in the inguinal canal. I left it where I found it, and closed the wound in the usual manner. I have not seen the patient since the operation, but have learned from his physician that it was entirely successful in reliev-

ing the symptoms, and that he recovered rapidly, without any signs of peritonitis.

Remarks.—My object in detailing the above cases is to bring before the notice of the profession an operation which, though well known in Europe, and almost exclusively practiced by several English surgeons of eminence, has received little if any attention on the part of the profession in this country. So far as I have been able to inquire, our American periodicals do not contain a single recorded case in which this operation has been performed. The operation for the relief of strangulated hernia without opening the sac is of French origin, having been proposed by Petit in 1718. The proposal met with little favor, however, until 1833, when the procedure was revived by Aston Key, and subsequently advocated by Luke, Gay, Bryant, and several other English surgeons. The advantages claimed for the operation are, its simplicity, and comparative safety, the patient being spared the danger of peritonitis caused by the opening of the sac and the exposure of its contents. In regard to the first point, I am satisfied that it is much more simple than the ordinary operation, and that it involves much less disturbance of the tissues; it also appears to me to be exceedingly easy of execution, especially in cases of femoral hernia. As regards the comparative safety of the operation, this lies in the fact that the sac is left unopened. That the opening of the sac, together with the exposure and handling of its contents, is a circumstance which favors the occurrence of peritonitis, and which tends to increase the latter when already existing, will, I think, hardly be denied by those who have seen or treated many cases requiring operation. The most important statistics bearing on the comparative safety of the two methods are given by Mr. Luke, and the results presented are the more valuable, as all the cases occurred in Mr. Luke's own practice. Of 84 cases requiring an operation, the sac was opened in 25; in 59 it was left unopened. Of the former, in which the sac was opened, 8 died, or 32 per cent.; of the latter 7 died, hardly 12 per cent. The cases I have narrated are too few in number to warrant any general conclusions, yet I cannot help contrasting them with other cases where I operated by the usual method, and in which peritonitis of an alarming character almost immediately followed. There have been two principal objections urged against Petit's operation—1st, the danger of returning into the abdomen a portion of intestine strangulated by the contents of the sac; and 2d, that of returning a band which is either gangrenous or ruptured. In regard to the first of these dangers, it may be remarked that the existence of internal strangulation is very rare, and that where it does exist there are usually adhesions between the sac and its contents, which compel the opening of the former in order to effect reduction. The same fact may be stated with reference to the danger of returning the intestine in a state of gangrene, this condition generally being preceded by such a degree of inflammatory action as is sufficient to produce an adhesion of the contents of the neck of the sac. Moreover,

some opinion may be formed as to the existence or non-existence of mortification by attending to the general symptoms, and by noticing the length of time that has elapsed since the strangulation began; also, during the operation, the presence of gangrene is often announced by change in the appearance of the sac, even before this is laid open. But that the risk of returning a gangrenous intestine, or one doomed to gangrene, really does exist, is proved by the second case I have related; and yet the result of this case is especially interesting, as showing that such a procedure is not necessarily fatal, and that leaving the sac unopened does not prevent the establishment of an artificial anus. Some very instructive facts bearing on this question are given by Mr. Bryant, in Guy's Hospital Reports, 3d series, vol. 2, where an analysis is presented of 126 fatal cases of hernia. Mr. Bryant shows conclusively that the danger of fecal extravasation, after the return of a mortified intestine into the abdominal cavity, has been very much exaggerated, this having occurred in one only out of six cases, and then at a remote period, after several weeks of favorable progress. In the same paper it is also shown that, where the intestine is gangrenous, a fatal result follows much earlier when it is left in the sac and laid open than when it is returned to the sac's mouth, and the establishment of an artificial anus left to nature. The reason why fecal extravasation does not more often occur is doubtless to be found in the fact that, peristaltic action being arrested in the mortified intestine, it remains stationary at the mouth of the sac, so that before it gives way the inflammatory plastic exudation has furnished a barrier, which defends the cavity of the peritoneum against the entrance of feces. In conclusion, I may state that, in my opinion, there are few cases in which the operation without opening the sac should not be tried before resorting to the ordinary procedure; and that, if performed early, it is, as some author has already observed, little more than the employment of the taxis, with the addition of a superficial incision.—*American Medical Times.*

Abortion—Its Prevalence, and the Duties of the Profession.

The appearance in the courts of two abortionists within a short period, to answer to the charge of homicide, and the introduction of a more stringent Act against this crime into the Legislature of New York, are suggestive of the query—"How far does this evil exist at present in American communities, and what is the popular opinion in regard to this crime?" If viewed in the light of an ancient civilization, the question would seem to have some pertinency, but it appears the most obvious anachronism to canvass the frequency of this crime, and the state of popular opinion in regard to it, in a Christian community. Nevertheless, the fact of the existence of abortion as a common and even increasing evil, appears in our mortality records; and the evidences that the public do not

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look upon it as a flagrant crime, and regard its abettors as criminals, become painfully apparent when the horrible developments of murder, by the infamous acts of abortionists, are revealed.

The proportion of still-births to the living gives the only basis on which can be calculated the number of cases of abortion. These figures are, however, but approximative, for very many cases of still-birth are not produced abortions, while a vast number obviously escape detection and registration. Taking our mortality reports with all due allowance for these discrepancies, the record is still sufficiently humiliating. From these, it appears, that since the first registry in New York, in 1805, the proportionate and actual increase of still-births has been alarmingly rapid. In 1805, the ratio of fœtal deaths to the population was 1 to 1,633, but in 1849, 1 to 340. In 1856, the records show that 1 in every 11 is still-born in this city, while the reports of European countries, even allowing for criminal abortions, give the proportion of still-births at 1 in 15. Accurate records of the best practitioners give, as the ratio of premature births, or non-viable fœtuses, to the whole number of births, which includes, of course, only abortions from natural or accidental causes, 1 to 78; but in New York the ratio of the same births to the whole number is 1 to 40. The ratio of premature still-births at full time in this city, in 1846, was 1 in 10, and in 1856, ten years later, it had increased to 1 in 4. From these facts it is apparent, not only that produced abortions are frequent in this community, but that they are rapidly increasing. In seven years, from 1850 to 1857, the still-births doubled, and we have good evidence that since that period the proportion has rapidly increased.

New York may justly be taken as an index of this country. It certainly does not give an exaggerated representation. The registration returns of the State of Massachusetts show that the comparative frequency of abortions in that State is thirteen times as great as in New York city. Allowing that some discrepancy in the returns must exist, they still prove the general prevalence of this crime in one of the most intelligent and moral communities of the United States. Whoever examines the advertising columns of country papers, and marks the large number of nostrums which in various and cunning phrases are recommended as certain to effect abortion, cannot doubt the wide and almost universal prevalence of this crime. It is painful to believe that the public conscience is not alive to the moral turpitude of abortion. And yet we have frequent evidence that it not only is not shocked at the criminality of the act, but that it even regards with indifference the revelations of the scenes of cruelty, debasement, and utter loss of every virtuous impulse which the courts often reveal to the public gaze. The horrible tale of seduction, abandonment, suffering and death brought to light in the case of Miss Anderson, passed without a comment. On the contrary, it is to be feared that it was read by not a few with as much interest and as little profit as the idle tales of the magazines. It cannot be denied that in every grade of society lax opinions of the criminality of procured abortion exist. It is not

alone the ignorant and vicious that consider it no crime; the religious equally entertain the belief that abortions may be practiced without a shadow of guilt. Every physician must have been approached by persons of upright motives with solicitations to prescribe remedies or employ means which would terminate an early pregnancy. There cannot be a doubt that the public mind to-day is inclined to regard abortion as a crime only under certain circumstances. The life that is sacrificed is regarded as unreal, and the convenience or comfort of the parents is alone consulted.

Who is responsible for the tone of the public sentiment on the question of the criminality of abortion? We believe it rests entirely with the medical profession. Medical men know well that abortion is the sacrifice of human life; they know well, therefore, the heinousness of the offense. In their daily intercourse with their patients they have the opportunity and the power of inculcating correct opinions of the nature of this crime. Every truly conscientious physician performs this duty faithfully, and often most effectually; the erring and unthinking are instructed, and the lesson makes a profound and lasting impression. But there is a class of physicians who treat this subject with so much indifference that they sanction rather than discountenance the crime. In mild terms they object to employing means to produce abortion, and yet suggest the remedies by which it may be accomplished. The effect is pernicious, as the crime is generally perpetrated. There is still another class of medical men, standing on the boundary between legitimate medicine and quackery, who both advocate and practice abortion. They assume a sanctimonious air and a clerical dress, and under this specious guise practice the black art of abortionists. They are found in the most respectable medical circles, and make their professional associations subserve their base purposes. Judged by the moral code of a Christian civilization, they are the most abandoned criminals in the community, and should be thoroughly purged from the profession. In this city the Academy of Medicine, and in the country the Medical Societies, should inquire, "Have we not abortionists among us?" We do not doubt that they will be found, and that too in startling numbers, especially in large cities.

The whole question of abortion, its religious, social, and professional bearings, should be discussed in all medical societies. The duties of our profession to itself, to religion, to the cause of humanity, should be established on a righteous basis, and every member should be compelled to conform his conduct to this standard.—*American Med. Times.*

A Clinical Lecture on Typhus and Typhoid Fever. Delivered at the Fever Wards of Bellevue Hospital. By ALFRED L. LOOMIS, M.D., Physician to the Hospital.

All the patients admitted into the ward, as nearly as could be ascertained, were taken ill suddenly. The majority had a well marked chill at the onset of the disease. Heat of skin was not a prominent symptom in most of the cases. Delirium came on early, and in four instances was very violent; a tendency to stupor was present in most; when coma occurred it was developed suddenly, and, with but two exceptions, was fatal. In all but ten the countenance had a livid hue, and the eyes were suffused. Diarrhœa, pain on pressure of the cœcum, tympanitis, and gurgling, were present in only six, in all of which the rose spots were present. Subsultus tendinum was not marked in more than half of the cases, and when present was slight, occurring as frequently in those who recovered as in those who died. Epistaxis was noticed only in those who had the rose-colored rash. Hæmorrhage from the bowels occurred in but one case, which was fatal on the sixteenth day. In thirty-two cases a petechial eruption was apparent over the whole surface by the seventh day; at its first appearance it was bright, partially or completely disappearing under slight pressure; in two days it became dark and was unaltered by pressure; it was visible in each case until convalescence was established; one death occurred; in two there was no eruption. In the remaining case a few spots only appeared on the chest and abdomen of a bright rose color, readily disappearing under slight pressure; each spot remaining only two or three days and then followed by successive crops of eruptions. The question now very naturally arises—Have we had two distinct fevers with two distinct eruptions, or only one fever with two varieties of eruption? The profession is divided on this subject. From the closer observation you have given the cases, as they have occurred the past two months, you are, I think, perfectly prepared not only to recognize two distinct eruptions, but that in patients lying side by side having the eruptions, there has been a clear and unmistakable difference in the symptoms, mode of access, march, duration, and convalescence, as well as in the effect of stimuli; and that following these eruptions to the dead-house, the lesions have differed as widely as the eruptions. True, unless the "eruption makes the distinction, there is no sufficiently constant distinction during life;" but the same may be said of the exanthemata. I will take a step further; in tracing out the origin of these cases, not in a single instance have I found typhus contagious, followed by typhoid symptoms, but always by typhus and vice versa. On the eruption then, and that only, are we to rely for a certain diagnosis. When it has not been present, or not characteristic, I have delayed the diagnosis; but when the petechial rash of typhus has been

copious (as in thirty-two of the cases), I have not hesitated to call it typhus; and when, on the other hand, the rose-spots of typhoid have been present (as in six cases), I have been equally as certain of typhoid. There are those who are sceptical on this point; yet the marked contrast between the measly rash of typhus covering the whole surface, and the isolated rose-spots of typhoid appearing by twos and threes from day to day on the abdomen and thorax, ought (it seems to me) to leave no doubt. In three of those who died (on whom autopsies were obtained) the kidneys presented unmistakable evidences of fatty degeneration; in each of these cases death had been preceded by sudden coma, the patients apparently doing well until the coma occurred. A trace of albumen was found in the urine of two. Care in future examinations will, I hope, determine how constant coma and Bright's kidney occur together in typhus. No microscopic examination of the urine was made in these cases.

There was but one death among those under twenty years of age, while among those who had reached adult life about one half died; in fact, only five adults, who were very ill, recovered.

In all the cases stimulants were administered more or less freely; in fact stimuli and nourishment have constituted almost the entire treatment. In the majority it was commenced early, so early in one or two cases as the second day. In many of the cases large quantities have been given (as 60 ℥ per day). The guide in its administration has been the pulse; when it became frequent and feeble stimulants were increased in sufficient quantities to control it without regard to the amount administered. With but one exception, where the pulse has not responded to the stimuli, the case has terminated fatally. In those cases where the rose-spots were present, the average amount of stimulus required has been much less than in others, and was commenced later in the disease. The younger the patient the more sure and prompt was the response to the stimulus. Its use was continued in all cases of recovery until convalescence was fully established.

I cannot close without making special mention of one who has served me so faithfully as acting House-Physician, I refer to the late Henry W. Cook, M.D.

When, one year since, he passed his examination (than whom none stood higher), and entered Bellevue Hospital, he bade fair for a life of usefulness and position. A thorough student, striving to grasp all knowledge within his reach, earnest and assiduous in his labors, always at his post, never having left the hospital even for a day, since his admission. Although at the commencement of his service in the fever-ward he expressed some fears lest he might contract the disease, those fears never prevented him from faithfully, and more than faithfully, performing the duties devolving upon him. I add, without comment, the record of his illness, and of the post-mortem appearances, as made by Dr. T. K. Chandler, house-physician.

Henry W. Cook, aged 26 years, well developed and strong, was

taken with chills on the 4th of March. He had no predisposition to disease, save that he had been closely confined to the hospital for many months, and had spent considerable time in the fever-ward. After having chills he continued feverish and uncomfortable for several days, and expressed fears that he was going to have typhus fever. During this time his bowels were constipated, his pulse was somewhat accelerated, and he complained of pain in his head, which he thought to be neuralgia, and he had a tooth extracted, believing that the pain proceeded from that. On the sixth day, as he felt no better, but rather worse, he kept his bed; and on the seventh day, a rather sparse eruption appeared on his abdomen, the spots being bright, and disappeared fully under pressure. This eruption extended in two days to the arms and legs, and after this time it did not disappear under pressure; it also became of a darker color: it was not papular in its character. At this time and subsequently, the tongue was considerably furred and the pulse more frequent until the tenth day of the disease (dating from the commencement of the chills, the pulse ranged between 90 and 95 beats per minute); but on the tenth day it rose to 118 beats, and it fluctuated between 108 and 118 from that time till the fourteenth day. On the thirteenth day it suddenly became very weak, and the patient seemed to be much prostrated. On this day he had five diarrhœal passages, fluid, dark in color, and very offensive; previous to this he had had no spontaneous passages, but had required injections daily. On the fourteenth day he seemed much better; there was no delirium, of which there had been a little during the nights immediately preceding. The pulse was full and regular, and of about 108 beats per minute. The countenance was bright and cheerful, and the tongue appeared cleaner than before; it had never been dark or dry. The patient sat up in bed and shaved himself in the morning, and during the day he wrote two prescriptions for himself, which evinced perfect steadiness of hand. His manner was cheerful and natural, and when asked whether he would like to have his friends apprised of his illness, he said he would not at present, but that in a few days, when he should be strong enough, he would like to have them come and take him home. Altogether his appearance was so favorable that his attending physician and the resident staff of the hospital considered him out of danger. At ten o'clock P. M. he was in the same favorable condition. He took his hourly quantity of brandy (℥ iss) and his beef-tea as usual. His pulse at this time was about 82 beats per minute and full. He seemed disposed to sleep. From this time until two o'clock A. M. he refused to take any nourishment, and only a part, probably about half, his usual quantity of brandy. At this time his pulse was 100, and rather feeble. He was at once required to take his allowance of brandy and of nourishment, and from this time until morning he took them regularly. At seven o'clock his pulse was about 120 beats per minute, and quite feeble, and the brandy and nourishment were increased to double the quantity he had been taking. He was perfectly rational at this

time, and frequently complained of great weakness. About nine o'clock he suddenly sank into a profound coma, from which he never awoke. During the first hour he was in this condition his pulse sank to 70 beats per minute, but after that it rose to 130, 140, and so high as 150 during the last hours of his life. The number of respirations, which at first was entirely out of proportion to the heart's pulsations, gradually increased to 35, and even 40, during the last hours of his life. During this period, the expirations were occasionally puffing in character. The pupils, during the early stage of coma, dilated, but at a later period they were moderately contracted, and but slightly sensible to the influence of light. Swallowing was very difficult throughout this period, and during the last few hours impossible. Soon after the patient entered the condition of coma, a blister was applied to the back of the neck, and a large mustard plaster to the abdomen. At a little later period a turpentine stupe was applied to the chest, but none of these measures seemed to produce the slightest effect on the patient; and from the time he became comatose he never moved a limb, nor opened his eyes, nor gave any signs of consciousness. At the order of the attending physician, turpentine was given in drachm doses by the mouth, but it excited so much irritation of the larynx that we were obliged to desist from giving it, except per rectum, in which manner brandy, carb. am., and nourishment were also freely given, but to no purpose. The bronchial tubes gradually became obstructed, the respiration more frequent, and the heart more feeble, until ten minutes past nine o'clock P. M., when the patient breathed his last.

An examination of the body was made by Drs. Paine and Sears nineteen hours after death, Dr. Loomis being present, together with many of the house staff.

Sectio Cadaveris.—Nineteen hours after death. Body still warm; rigor mortis moderately well marked; whole posterior aspect of body echymosed from post-mortem capillary stains. The body appeared to be well nourished, having undergone no emaciation; abdomen not at all tympanitic. Upon removal of the calvarium marks of venous congestion were presented. Raising the dura mater the arachnoid membrane was found lifted up from the surface of the brain by sub-arachnoid effusion; the convolutions were sharply defined. The arachnoid was intensely congested. The brain was somewhat harder than natural, and its vessels intensely congested. Opening into the ventricles (lateral) no effusion was found. Opening the abdomen the intestines appeared, presenting a perfectly healthy appearance, with the exception of three small spots of congestion. Opening the intestines, three of the Peyerian patches were seen imbedded in the three congested spots; they were moderately enlarged. Nothing abnormal, however, was seen in the patch at the ileo-cœcal valve. The right kidney was considerably enlarged and intensely congested; upon section it had the appearance at one end of an apoplectic clot; blood exuded from it freely; there was no disproportion between the corti-

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cal and medullary portions. Left kidney not so much enlarged nor congested, nor had it the apoplectic appearance of the right; other appearances were the same. The urine was drawn off and examined by heat and nitric acid, and found to contain a marked amount of albumen. The microscope showed fatty casts, and a microscopical examination of the structure of the kidney showed well marked fatty degeneration.—*Amer. Med. Times.*

Report on Hospital Gangrene. By S. J. RADCLIFFE, M.D., Acting Assistant Surgeon U. S. A., U. S. General Hospital, Annapolis, Md.

CASE II.—Robert Whitehill, private Co. E, 10th Pa. R. C., a tall, able-bodied young man, aged 23 years, wounded and taken prisoner at the battle of Fredericksburg, December 13th, 1862, arrived at this hospital via Richmond on the 11th of January, 1863, per steamer New York. He was wounded twice, both by (supposed) conical balls—the first ball entering about four inches below and inwards from the anterior superior spinous process of the ilium of the right side, and about two inches from Poupart's ligament, passing backwards and emerging on the dorsum of the ilium, through the glutei muscles, six inches posteriorly and above the head of the femur; the second ball entering near the tuberosity of the ischium of the same side, passing forwards and inwards behind the femur, and emerging on the internal aspect of the thigh, upper third, posterior to the great femoral vessels. He received the first wound from the front, and on turning to go towards the railroad he received the second. The orifices of *entrance*, at the time of admission, appeared perfectly healthy and healing well, but the points of exit were not in so healthy a condition. There seemed to be a bright red ring of cartilaginous hardness surrounding the wounds at the points of exit, and the inner surface was filled with a gray, pultaceous admixture of bad pus and a watery fluid, surrounding imperfect granulations. His countenance seemed bright and cheerful, his appetite was good, and the secretions natural, and, as in the former case, no gangrene; no abnormal condition was anticipated from a first examination. About the fourth to the fifth day the points of *exit* began to enlarge and smell badly, the discharges becoming decidedly ichorous, and the edges disposed to turn up, but were not very jagged or uneven. Besides this the circumscribed redness, noticed in the preceding case, was apparent, but more decided in its bounds and of livelier, fresher color. It occupied in space about one inch and a half each way around the sore, in the inner part of the thigh, which was the worst, almost symmetrical or perfectly round. That at the wound through the gluteal muscles not so large.

The integuments within the boundary at the wound of the thigh gradually yielded to the influence of the poison, became darker

and darker, until it appeared as if it had been subjected to the influence of a red or white hot body, *i. e.* charred, and gradually shrinking, finally gave way, and separating in one homogeneous mass, left the parts as if marked and cut out by rule and compass, but involving very little besides the integuments and subcutaneous tissues, or rather did not penetrate so deeply as in the former case. The muscles not much affected, though bare. The other orifice of exit, that on the dorsum ilii, suffered less in extent superficially, the gangrene extending more in the subcutaneous and intermusclar substances, and burrowed more or less every way, leaving the integuments, though much larger than the original opening, much less affected, and comparatively in a sound condition. It would not be very instructive to trace the disease day by day, as sometimes there would be very little change, but it was about the tenth day after the line of demarkation had been drawn, that the dead matter began to leave the sound structures, during which time the discharges were very slight, but of a serous or watery nature and highly offensive. The points of entrance were not affected by the gangrene, remaining quiescent, with loose granulations about the edges. After the sloughs had separated, and the parts had become clean, the edges of the tissued wound were rather inverted than everted, and a healthier condition at once supervened.

The constitutional symptoms were quite dissimilar to the first case. The disturbance was never so great. He had no decided chill to usher in the attack, and little apparently, if any fever. He was more or less in a depressed condition during the whole period, and he exhibited much anxiety at all times concerning his condition, and also much muscular debility. His pulse was feeble and quick, say 100 to 120 per minute, a pulse of debility throughout; his tongue was clean, though pale; his countenance was pallid, the distaste for food constant, no great thirst, and he suffered scarcely any pain, or at least did not complain much until after the separation of the slough, though he suffered somewhat from sleeplessness. At no time did the fœtor compare with that of the preceding case, nor was it very great. His bowels were not so prone to looseness, and the atonic symptoms were not so aggravated.

The treatment in this case was conducted in the following manner:—After cauterizing the entire wound, its edges and a part of the surrounding tissue, with nitric acid, I applied a large fermenting poultice, consisting of powdered charcoal, one part, corn meal, two parts, mixed into a proper consistency with fresh yeast. I renewed this twice or thrice daily, every other day using the nitric acid to hem it in from further extension. In about five days the slough began to loosen from the sound tissues, and finally by the tenth day the mass separated and dropped out nearly all at once, leaving the muscles and other structures clean and of a bright shining red color. After the parts were cleansed by frequent washings, I filled the cavities thus scooped out with finely picked lint, and saturated it with acid. nitric. dil. cum creasoto of the before men-

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tioned strength, which I had renewed at least twice daily, gradually lessening them as the wound improved. I used also accasionally liq. sodæ chlor. dil.

The internal remedies were nearly the same as in the preceding case. To tr. ferri chlor. ʒ i. I added quiniæ sulph. ʒ ss., and gave gtt. xxx. or xl. three times daily, largely diluted with water. I gave him also chalk and catechu when his bowels were loose; solution of sulphate of morphia at night to promote sleep. I gave him also a good nourishing diet, a bottle of porter or milk punch daily, and everything that is usually included in a general supporting regimen, under which he is gradually mending in general health, and granulations are springing up finely in every part of the wound.

Case III.—Jas. C. Jaycox, private Co. C, 40th N. Y. V., apparently of good constitution, aged twenty-four years, wounded and taken prisoner at the battle of Fredericksburg, December 13th, arrived at the hospital, via Richmond, per steamer New York, January 11th following.

He was wounded by a musket ball, kind unknown, probably at short range, in the external aspect of the upper part of the lower third of the right leg, four or five inches above the external malleolus, the points of entrance and exit of the ball being about two or three inches apart. No fracture was perceived.

The wound on admission gave no decided evidence of local mischief, save in this particular, that the openings were quite large, the granulations in that condition when wounds remain stationary for some time, and the edges were a little pouty and irregular, all of which I attributed to want of cleanliness and attention, as he said his wound had not been dressed since he left Richmond, and then very imperfectly. Nor did his constitution seem to suffer in the least from the injury. His health was notably good. His appetite was good and he slept well at night, and all the secerning organs were performing their functions properly. He did not confine himself in bed, but with the aid of a crutch moved about the room, with every indication that he would soon be well. I used simple dressings, and put him on good diet.

About the fourth or fifth day after admission, the integuments between the orifices assumed, as in the other cases, a dark red or congested appearance, and the discharges were very much lessened, and of a thick, grumous consistence. His appetite failed, his pulse became quick and small, tongue was clean, his countenance and general surface pale, and shivering at the least exposure to the atmosphere, and he exhibited much anxiety and restlessness in regard to his wound and his condition.

From this condition of things the integument gradually gave way, sinking lower and lower from the surface, and finally resulting in one entire soft, pulpy, ash-colored mass, resembling very much old putrid cheese, which filled the wound completely, adhering to the adjacent parts with much tenacity, and

leaving the edges, which were quite circular, though a little jagged and of a diameter of about three inches, thick, shining red, and much everted. This dead fungoid mass adhered so tightly to the tissues below, that it could scarcely be removed by manipulation except in very small particles, resembling then large granules, which were very friable. It now began to enlarge in every direction, slowly but surely, and daily I discovered its borders extending more or less, not only superficially but deeply in the subcutaneous tissues, and in a very irregular manner.

It was not until the slough commenced to separate that he felt much pain. He was somewhut restless at night from the constitutional disturbance which continued *pari passu* with the local affection, but he experienced no direct pain until the muscles were laid bare, and then the weight of the bed-clothes, the application of cold water, dilute nitric acid, or any dressing, or the least handling, caused him much suffering. There was no bad smell at any time equal to either of the other cases, and though the constitution suffered materially, it did not to the same extent as the others. His bowels were easily controlled, but he had the same tendency to looseness as the preceding cases. The pulse ranged from 90 to 120, not much exceeding the latter at any time; his tongue kept remarkably clean, his appetite only medium or fair, thirst not great, skin dry and pale, countenance expectant or anxious, and he was easily affected by the cold air of the apartment. The slough parted little by little with each succeeding washing, and finally, when all were removed, it left the muscular structure beneath in a rough, uneven, or papulous condition; and the edges thick, red, everted, and jagged. By the first of February a healthier action had supervened. Heretofore the changes had been gradual, and the difference in daily reports, though showing progression in the destruction, did not require to be materially attended to. By the sixth of February the parts had become clean, and healthy granulations began to be visible, and with this a marked improvement in the general condition of the patient.

I commenced the treatment of this case by an astringent and anodyne wash of cupri sulph. gr. xvi., ad sol. opii aq., Oj., and the occasional application of Labarraque's solution of chlor. sodæ ʒi. to Oj, ʒ j. of liq. chl. sod. ad acquæ Oj. Finding this not successful, I ordered the dil. nit. acid and creasote to be applied with a continuation of the dil. sol. chlor. soda. After the slough formed I cauterized the whole surface of the wound, the edges, and adjoining sound skin, with the fuming nitric acid, about every other day; and after the slough separated I had the cavity filled with picked lint, and kept saturated with the dil. nitric acid and creasote, gradually lessening and diluting it more as the condition improved. The internal remedies were the same as in other cases, tr. cal. iron and quinia, morphia to promote sleep, and chalk and catechu to restrain the bowels. He also had beef-tea, porter, etc., etc. The apartment, as in all the cases, was kept well ventilated,

all dressings were promptly destroyed, and all means used to prevent an intensity of the poisonous atmosphere.

The above report was made up to the eighth of February, when by direction of the Surgeon-General all cases of hospital gangrene in this hospital were aggregated in wards suitable for them, and placed under the care of one medical officer, with instructions to take notes, and report the result to the Surgeon-General, through Surgeon McFarlin, in charge. It will be seen, however, that the gangrenous condition of the wounds in these cases had been arrested and converted into healthy granulating sores, from which a successful issue might be confidently predicated. They were no longer cases of gangrene, but extensive granulating sores, and, of course, the treatment required was only such as is usually necessary for such reparation. In the case of Dunkle, the officer in charge of the hospital gangrene wards told me that a colliquative diarrhœa, which occurred after leaving my ward, lessened very much his chances for recovery. I am glad to say that this medical officer is leading them on to a successful and happy termination. Dunkle will doubtless have a permanently fixed leg, it being bent at nearly right angles from the contraction of the muscles, but in the other cases there will likely be no deformity. The granulations and repair have filled up the wounds nearly to the surface; and in the natural course of things a short time only will be required to pronounce them in all respects cases of successful treatment. I have had an opportunity of examining these cases up to March 12th.—*Amer. Med. Times.*

Amputations, when to be performed and when not required in Military Surgery. By JOHN SWINBURNE, M. D., of Albany, N. Y.

[Paper read before the N. Y. State Medical Society.]

The following are the rules which I have adopted for amputation, after careful study and experience; some of these rules I have adopted from the Sanitary Report on "Amputation:"

1. "Cases where a limb is nearly or completely torn away, leaving a ragged stump."

2. "Cases in which the soft parts of a limb are extensively lacerated or contused, and the principal arterial and nervous trunks destroyed, and the bone denuded or fractured."

3. "Cases in which a similar condition (of the soft parts) exists without either fracture or denudation of bone."

4. Cases in which the artery or arteries are destroyed, so as to cut off circulation below the wound, and where gangrene would follow. Circulation ceasing, and the extremity becoming *cold.*

4. Compound and comminuted fracture of the knee-joint requires

amputation, while the passage of small balls, which do not shatter or open the joint too extensively, does not necessitate amputation.

6. Compound and comminuted gunshot injuries of the ankle-joint made by Minié balls may require amputation, particularly where material injury is done to the arteries. Ordinary gunshot wounds of the same joint do not necessitate amputation.

7. Compound and comminuted gunshot injuries of the femur or tibia which extend into the knee-joint may require amputation.

The foregoing rules are those which I consider applicable to amputation. I will now proceed to give such rules as seem to me most reasonable as governing excision; and shall assume that the main arteries are uninjured, and the parts beyond the wound possessed of full vitality.

1. Excision should be confined to the upper extremities—the shoulder and elbow being the principal parts upon which that operation should be practiced.

2. If the head of the humerus is shattered by a gunshot, excision is the only remedy. If the comminution extends to the shaft, the loose portions only which are deprived of periosteum need be removed, the residue left to granulate. If the glenoid cavity is crushed, it can be removed with a chain saw, or its injured portion gouged out.

3. If the elbow joint is crushed or comminuted by a ball, excision is the only remedy. If the injury is confined to the articulating end of the humerus, remove it, but do not disturb the ends of the radius or ulna; on the contrary, if the injury be confined to the articulating ends of the radius, or radius and ulna, remove both, but not the humeral articulation.

If the articulating ends of the humerus, radius, and ulna are crushed, remove them all. What is meant in the books by partial excision, is the removal of a portion of the joint, such as part of the humeral articulation, or the articulating end of the radius or ulna only.

On the contrary, the removal of the entire half of the joint results in a new articulation, and not in anchylosis, as is often the case in partial excision. If the comminution extends to the shaft of the humerus, or radius and ulna, remove its loose spicula, and leave the rest to nature.

4. In comminuted compound fracture of the carpal end of the radius, or radius and ulna, excision of the articulating ends affords the most reasonable prospect of success. Leaving it to nature is far preferable to amputation. Never amputate for this injury.

5. Compound gunshot injuries of the carpus or *metacarpus* seldom if ever require either excision or amputation. Remove the loose bones, and treat as a simple wound.

6. In compound gunshot injuries of the phalanges excision can be practiced only with varying success, owing to the size of the bullet and smallness of the member. The rule is to save as much as possible. Injuries to these parts inflicted by buck-shot or pistol

balls do not, as a rule, require amputation. On the contrary, most of them can be saved.

7. In compound and comminuted injuries of the humeral shaft excision or amputation should never be performed. The loose spicula should be removed, and the case treated as an ordinary compound fracture. If, however, the comminution extends to the articulation, it should be excised with the loose spicula, while the fragments of the shaft which still retain their periosteum should not be disturbed.

8. The same rule applies to the shaft of either or both bones of the forearm. In all cases avoid constriction by bandaging.

9. The treatment of compound and comminuted fractures of the thigh becomes a matter of serious consideration, since it involves many important points. Statistics from the Crimean War show that in amputation through the hip-joint all died. In the upper third, 87.0; in the middle third, 60.0 died; in the lower third, 56.6 died. While the present war will, I think, demonstrate that even a greater proportion than this prove fatal.

Excision of the *shaft* is evidently out of the question, since all die after the operation. The question then arises, shall we amputate, or shall we treat such cases as ordinary compound fractures? I prefer the latter, and have from the first thought it the most reasonable treatment. The plan I propose is to place the patient on a bed or stretcher, extend the limb as near as possible to its normal length without giving too great pain. Retain it in that position by fastening the foot to the foot of the bed or stretcher by means of adhesive plaster, as in ordinary compound fractures, as I have on other occasions illustrated.* Make the counter-extension thereon by an inclined plane against which the body impinges by elevating the foot of the bed or stretcher, or the use of a perineal belt fastened to the head of the bed or stretcher. To obviate inversion or eversion of the foot, I place bags of sand on each side of the foot. There should be no bandaging of the leg or thigh. If collections of matter follow, free incisions may become necessary to relieve constrictions, and to facilitate the discharge of such matter and spicula of bone; irrigation or the application of cloth wet in cold or warm water must be continued to the limb until inflammation has passed off.

Under no circumstances must the patient be removed from the bed or stretcher until the consolidation of the bone is considerable, when artificial support can be given, and the patient allowed to go about on crutches. In this way I contend that many more lives can be saved than by amputations, and of necessity with less mutilation. Hence, do not amputate for compound and comminuted fractures occurring in the shaft, neck, or head of the thigh-bone.†

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* See Transactions State Medical Society for 1861; also Medical Times and Medical and Surgical Reporter, same year.

† I here present the condensed report of W. Van Steinburg, M.D., Surgeon to the 55th N.Y.S.V., who has treated twenty-one cases of compound

If the head of the femur is detached, and the joint opened, it may require removal. This, however, may be a point for future consideration.

10. Gunshot injuries of the cancellated structure of the bones which enter into the formation of the knee-joint do not necessitate amputation.

I have seen several instances in which the ball had passed through the head of the tibia without wounding the joint, and still the patients are recovering with good limbs. One case where the ball was found to have passed through the insertion of the *ligamentum patellæ*, and deep into the canelli, was removed by the trephine, and the patient did well. Another did well where the ball was extracted from the cancellæ of the external condyle of the femur. Therefore, unless a fracture of some magnitude extends into the joint, do not amputate.

11. In compound and comminuted fracture of the knee-joint I should advise amputation, though there may be wounds made by bullets through the joint without doing much injury to the bone or soft parts, in which case it may be advisable to try and save the limb. This seems more advisable when we take into consideration the facts as recently elucidated by Dr. Lewis A. Sayre and others, that the joint can be opened freely without much risk of fatal results, and the cases spoken of in this paper where the patient recovered after ligation of the femoral artery, added to the fact of

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and comminuted fractures of the thigh, two of which died. Of these there were three fractured in the upper third, and one death; twelve fractured in the middle third, and one death; six fractured in the lower third, and no death. These were treated by extension, supported by sand-bags applied in the long axis of the bone. This notice is due to the Doctor's sagacity and skill. The profession should know the comparative results, and I therefore submit his tables and remarks entire. If the Doctor could have taken the same cases from the field, and, before material injury was done to the soft parts by bandaging and rough movement, placed them on stretchers, and kept them on the same with appropriate extension, his success would have been much more perfect, since, after continued growing of the muscles has to any considerable degree taken place, extension cannot be effected as it could at first, and hence the imperfection spoken of. He says: "Out of twenty-one cases of compound and comminuted fracture of the thigh, taken indiscriminately, nineteen recovered with tolerably useful limbs. My plan of treatment has been by simple extension, as taught me by Dr. Swinburne. One case I will relate as well as possible from memory. Adjt. Wallace, 1st N.Y., was struck by a rifle-shot at the junction of the lower and middle third, the ball passing directly through 'antero-posteriorly,' comminuting the bone, and drawing the spicula into the muscles of the posterior part of the thigh. These I removed, and placed him on a stretcher, making extension from either end of said stretcher. I placed a leg of an old pair of knit drawers filled with sand upon each side of the broken limb, and told him not to suffer any one to remove him until he reached the General Hospital. He was taken to Washington, and there placed upon a bed, and the extension kept up. The wound was made on the 30th of June, and in October he returned to the regiment, with a leg two inches shorter, and foot everted. The eversion was the result of neglect in treatment, evidently."

the frightful mortality attendant upon amputation, even in the lower third of the femur; and we have, I think, data sufficient to warrant the effort to save the limb, where there is not great comminution of the joint.

The simple fact that a ball has been or is imbedded in the cancellated structure of the head of the tibia or condyles of the femur does not warrant us in resorting to amputation, and particularly so where the joint is not opened. I have in many instances removed balls from these positions by the trephine and gouge.

12. In compound and comminuted fracture of the shaft of the tibia, or even tibia and fibula, from bullet wounds, amputation should not be practiced, since hundreds who have *accidentally* escaped the surgeons have recovered with only slight deformity. I think as many will survive by simply treating these injuries as if they were ordinary compound fractures from any other cause as would from amputation, and of course with much more useful limbs.

I now know of at least a dozen cases which were destined for amputation that are now recovering, and most of them will be as perfect as before the injury. As soon as practicable after the injury the wounded man should be placed on a bed or stretcher, and kept there until consolidation of the bone takes place, or until removed to some permanent place for treatment. Extension sufficient to keep the limb to near its normal length. Lateral support given by means of sand-bags placed longitudinally, to prevent inversion or eversion of the foot, as well as for the proper support of the limb. Extension kept up with no bandaging, and the treatment proceeded with as previously detailed in analogous injuries of the thigh, or as if it were an ordinary compound fracture of the leg; but under no circumstances should excision be practiced. All that can be required is to enlarge the incision, and remove loose spicula and other foreign bodies. I may here state the great and potent reason why so many compound fractures do badly is the fact that the injured limbs are either bound up tightly with bandage and splints, or carried from hospital to hospital without even the support of a stretcher; a proceeding which destroys even a limb with simple fracture, and much more one of compound and comminuted fracture.

13. Simple gunshot injuries of the ankle-joint do not necessitate amputation, while compound and comminuted fracture of this joint, and particularly where the arteries are much injured, may require amputation. Though, with proper support, water-dressings, irrigation, free incisions, etc., a great majority will recover without operative interference. The same rule is applicable to gunshot wounds of the foot as of the hand, and I can safely say that there is scarcely a bullet wound of the foot which requires amputation. I have seen the whole scaphoid bone carried away, and still a good recovery took place. So the destruction of the astragalus may occur, and still recovery may go on favorably. See the case of Garibaldi, in whose ankle-joint the ball remained for some weeks, and without unfavorable results.

14. In compound and comminuted gunshot injuries of the tarsal and metatarsal bones the same rule of action should be adopted as in like injuries of the hand, with the exception that a slight deformity is not of such vital importance in the former as in the latter.

No excision should be performed in the second or inflammatory stage.* If the operation cannot be performed before this stage sets in, we ought to defer operation until the true second or suppurative stage.

In conclusion, I cannot urge too strongly the importance of having an abundance of stretchers for the immediate relief of the wounded, and particularly those wounded in the lower extremities, to which can be attached an India-rubber cover in case of heavy dews or rains. By this means the patient is treated more successfully some days after injury than if he were transferred to close and ill-ventilated hospitals, houses, or even tents, since you avoid the danger of *foul* and pus-generating air. These appliances keep them from the wet above as well as below. There should be at least a sufficient number of these stretchers to supply all cases of amputations of the lower extremities, as well as compound and comminuted fractures of the same, where any effort is being made to save the limb; without them our efforts are futile, since the bedstead or stretcher becomes the splint. So in all cases of wounds of the trunk.

In excisions of the shoulder or elbow-joint, or in any severe injury of the shaft, where an attempt is being made to save the limb, these *appliances* are, to say the least, a *great auxiliary* to the *successful* treatment of this class of *injury;* and I might say, an *indispensable splint* or *support.—American Medical Times.*

Bromine as a Prophylactic in Erysipelas, Diphtheritic Affections, etc.

MEDICAL DIRECTOR'S OFFICE,
LOUISVILLE, KY., March 1, 1863.

SIR: I desire to draw the attention of your readers to the use of bromine in the prophylaxis and treatment of erysipelas, diphtheritic affections, and in hospital gangrene. This agent has been used in the various hospitals in this district with very important results, in the following particulars:

1st. As a prophylactic in wards where cases of erysipelas have broken out.

2d. In the treatment of erysipelas and diphtheria by the inhalation of the vapor, and by topical applications of both the vapor and fluid.

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* This article divides gunshot injuries into three stages, the second of which is the congestive or inflammatory.

3d. In hospital gangrene and in all sloughing sores by the topical application of the solution of bromine in the bromide of potassium.

I subjoin the directions for the use of the bromine for the purposes above indicated. These directions are prepared at the request of Surgeon Perin, Medical Director of the Army of the Cumberland, who, in conjunction with Medical Inspector Lyman, Surgeon U. S. V., is now introducing the use of the bromine into the General Hospitals at Nashville and Murfreesboro, Tenn.

Yours, etc.,

M. GOLDSMITH, Surgeon U. S. V.,
Superintendent of Hospitals at Louisville, Ky.

The Compound Solution of Bromine is prepared thus: Take of bromine, one Troy ounce; bromide of potassium, one hundred and sixty grains; distilled water, enough to make four fluid ounces of the entire mixture.

DIRECTIONS FOR USE.

1. *For Fumigation.*—Place vessels, containing *one ounce* of the solution, at different points of the ward, and in number sufficient to secure in the latter the constant presence of the odor of bromine.

It should be borne in mind that, if the vapor of bromine comes in contact with the vapor of water, hydro-bromic acid is formed; therefore, when there is much of the vapor of water disengaged in the apartment, the quantity of the vapor of bromine must be correspondingly increased.

2. *Topical Application of the Vapor.*—A piece of *dry* lint is to be placed over the diseased part; over this is to be placed another piece of lint, *moistened with the solution of bromine*; over this, a *third* piece *spread with simple cerate;* the whole to be covered with oiled silk and bandage, so arranged as to retain the vapor in contact with the diseased surface as long as possible. The solution is to be removed as often as it becomes exhausted by evaporation.

3. *The Solution, in Substance, as a direct Application, in Hospital Gangrene, Diphtheria, Gangrene of the Tongue,* and other diseases of this nature.—The parts are first to be dried by the application of charpie; then the sloughs, if thick should be trimmed out with forceps and scissors as much as possible, for the thinner the slough the more effective is the remedy. The parts having again been dried, the solution is applied by means of a mop, or a pointed stick of wood, in quantity sufficient to saturate the sloughs. If the sloughs undermine the skin, or dip down into intermuscular spaces, the solution must be made to follow, with the pointed stick, or by means of a glass syringe.

If the application has been effectual, all odor from the diseased surface ceases, and the sloughs become somewhat hardened. The remedy should be reapplied every second hour, as long as any odor of putrefaction is present, or as long as the sloughs appear to be diffluent. It is not always necessary, especially when the

sloughs are diffluent and thin, to use the solution in its full strength; it may be weakened by the addition of water, as the disease subsides.

The points to be especially attended to, in the use of the solution of bromine, are two: 1. The solution should be applied in strength and frequency sufficient for the impregnation of *the whole of the sloughs;* 2. To secure this end, the application *should be made by the Surgeon himself,* and never be trusted to a nurse. If the sloughs are thick and cannot well be trimmed, the bromine may be introduced into the thickness of the slough by means of a hypodermic syringe.

After the topical application of the solution, the parts, when so situated as to render it practicable, should be subjected to the influence of the vapor. (See par. 1.)

Surgeons will do well to bear in mind that bromine is a new remedy for the purposes indicated above. The directions for its use, given here, are those followed in the military hospitals of this city; it may be found advisable to modify them as experience with the remedy accumulates. It is, therefore, earnestly recommended that the subject be studied diligently, that the effects of the remedy be carefully watched, and that the application be varied as new facts are developed in its use.—*Amer. Med. Times.*

Our Surgeons upon the Field. Being Extracts from an Address to the Graduating Class of Bellevue Hospital Medical College. By FRANK H. HAMILTON, M. D., Prof. of Fractures, Dislocations, and Military Surgery, Medical Inspector, U.S.A.

It is perhaps proper to assume, gentlemen, that during the present unhappy war, some of you will choose to enter the service of your country as surgeons in the army. We shall deem it necessary, therefore to give you a few words as to the nature of your duties in this capacity, and the manner in which they can be best performed.

Possibly your country may yet have need of you in another capacity. You may yet be called upon to shoulder the musket, and to enter the ranks as fighting men. If so, we hope you will not hesitate to respond to the call. Surgeons ought to make good soldiers, having been educated in a Spartan school, where cowardice is accounted a crime. The man who can remain cool and self-possessed in the midst of pestilence, ought to stand well the fire of musketry. Can any one suppose that the forty volunteer physicians who never turned their backs, but who fell with their faces towards the enemy at Norfolk, in 1852, or that any one of those thousands —your compatriots in arms—who have fallen on other fields, have died any less heroically than Warren on Bunker's Hill? or that they would have marched any less steadily upon the batteries at Fredericksburg than did the brave men under Couch and Sumner?

We think they were all brave men alike, and alike entitled to public gratitude; and we entertain no doubt that when you are needed for such services you will, under the inspiration of the same patriotism, do whatever is demanded of you.

But it is not probable that you will ever have any other mission upon the battle-field than that of surgeons. Your duty will be to save and not to take life, to bind up wounds and not to make them. You will have, therefore, no distinction to make between friends and foes. You will be employed solely to mitigate the austerities of war, by undoing in some measure the evils which war has done.

It is but justice to say that, by the character and qualifications of those men who have entered the service of the United States, whether as regulars or volunteers, the position of a surgeon in the army has been rendered eminently respectable. We venture to say that no officers, in any other department of the same rank, are more respectable. The surgeons of the regular army have all been subjected, before admission, to an examination as rigid as that which is required for admission to any of the armies of Europe: and their reputation for learning is notorious, and has been the subject of observation and of admiration the world over among medical men. A defense of these gentlemen would be out of place, when there is no one to dispute their position.

As to the volunteer surgeons it might be sufficient to say that, with few exceptions, they are the only commissioned officers of the volunteer army who have had any previous education or training to the peculiar and respective duties which they have been called upon to perform. With very few exceptions they are graduates of medical colleges, many of them having completed their education in large hospitals. A very large proportion of the brigade surgeons and full surgeons of regiments have been themselves in charge of civil hospitals, or they have been engaged before entering the service in practice, and there is nothing in the experience of a camp, except the mere routine of business, with which they are not perfectly familiar. Among all the surgeons of the army you will not probably find one who was, up to the moment of his entrance upon the performance of his duties, a merchant, a lawyer, a tailor, a shoemaker, a grocer, a saloon-keeper, or anything else, either more or less, than a physician and surgeon.

Moreover, nearly all volunteer surgeons have been subjected to examinations by regularly constituted State Medical Boards, before their commissions have been given to them. In no case which has come to our knowledge has this examination been omitted. While it is well known that at first, and for many months after the war began, no officer of the volunteer service, not in the medical profession, was, in a single instance, subjected to an examination of any kind, nor, in general, were any testimonials required as to intellectual or moral qualifications. Nor is there at the present moment any such examination or testimony uniformly demanded. Officers of the line are liable to an examination by a Board appointed

for that purpose, upon the complaint of their commanding officers, that they have been found incompetent. And this is all. Medical officers are liable to similar examinations before similar Army Boards.

The presumption is, therefore, established in our favor, and we are happy to be able to verify this presumption by an intimate personal acquaintance with a large number of the volunteer surgeons.

Our official position in the army of the Potomac has given us unusual opportunities of knowing these men, and we think that it ought to be received as a significant fact, that of more than two hundred volunteer surgeons who came directly under our notice, and upon whose conduct it was our duty to report, we have had occasion to recommend for removal but one.

While lying in front of Richmond, by order of the Commander-in-chief, we were directed to assemble the surgeons of the fourth corps, in order that they might deliberate and report upon the causes of the sickness which was then decimating our troops, and to suggest what, in their judgment, were necessary and practical remedies; and a more intelligent body of men it has rarely been our privilege to meet in any deliberative assembly. Their report, having been received at headquarters, was approved, and most of its suggestions were promptly carried into execution.

It was certainly no part of our intention, when we began to write this discourse, to compose a eulogium upon the medical officers of the army. But since we have spoken of them, it has occurred to us that, inasmuch as their official reports are seldom made public, you possibly may not be aware of what they have been doing: and that by a simple, brief narrative of some of their labors, you may gather certain useful hints as to what you will be expected to do.

The health of troops has always an intimate and direct relation to the sanitary police of the camp.

None understand this better than medical men: since the reciprocal influences of cleanliness, purity of air, and the physical condition of the body, constitute a great part of our medical studies. This knowledge, the result of reading and of experience, physicians have carried with them into the field.

But it must be remembered that it is not in the power of surgeons to enforce hygienic measures without the support of the commanding officers: and they have not always been able, therefore, to apply their knowledge successfully to the management of the interior police of the camps. Indeed, we are compelled to say, that there are but very few of the commanding officers in the volunteer service who understand the relations of these matters as physicians understand them. Our views upon the subject of cleanliness among troops have a much wider scope than theirs. We see in the lack of sanitary police the ultimate defeat and disorganization of our armies.

When garbage lies everywhere in the company streets, and the

air has a noisome odor both within and without the tents, we have found, also, that the men are dirty, ragged, and sickly—their muskets are rusty and out of order—they are insubordinate, mutinous, without drill and without discipline. They have no *esprit de corps* —no self-respect—no manliness—no courage; and they will not fight.

These are the links which compose the chain. Dirt at one end, and cowardice at the other—commencing in the camp at Alexandria, and ending in the rout upon the plains of Manassas. They are inseparable—and, in our opinion, whoever is responsible for the one, is responsible for the whole.

"Give me," said Major-General Keys, when, after our weary march of seven days, we first came in sight of the James river—"Give me the two best regiments in my command. I wish to post them at Turkey's Island Bridge." And after a moment's pause, he added—"the 2d Rhode Island and the 7th Massachusetts." We could have anticipated his choice, for we had inspected their camps often, and we knew from experience that troops whose quarters were always clean, never suffered their reputation to be soiled in battle.

Turkey's Island Bridge was, in some sense, the key to Malvern Hills, where, on the following day, our troops achieved a most brilliant victory, and the exhausted enemy ceased the pursuit.

Col. David A. Russel, who commanded the 7th Massachusetts, and Col. Frank Wheaton, who commanded the 2d Rhode Island, have both been promoted to the rank of Brigadier-Generals, as they well deserved to be; but in our opinion the effectiveness, value, and bravery of these two regiments was no less due to the perfect system of camp police carried out from day to day by Surgeons Holman and Carr, than to the splendid talents of their respective colonels.

We have had equal opportunities, also, of observing the conduct of our surgeons upon the field of battle. We have seen them under fire, deliberately dressing the wounds of the soldiers, or administering to them stimulants, nourishment, and such other comforts as it was in their power to furnish. In the performance of such duties one of my personal friends was killed, and several others have been severely wounded. More than once, in our official reports of battles, we have had occasion to call the attention of the commanding officers to the zeal and intrepidity of regimental and assistant surgeons.

After a battle, also, whether the army has been victorious or has suffered a defeat, the duties of the medical officers continue without interruption. In either case they have usually been compelled to labor incessantly for two, three, or more successive days and nights, without sleep, without rest, and sometimes without food even.

It is well known that both Drs. Milnor and Sutton, exhausted by their labors with the wounded at Savage's Station, finally perished, while in the hands of the enemy, from actual starvation.

On such occasions, also, the surgeons have usually been left

alone to do their work. Their nurses, cooks, servants and orderlies are gone. Their wounded men are in deserted houses, in barns, under sheds or hayricks, or under the shade of a tree upon the open field. They have often no candles, no seats, tables, or beds; no cooking utensils; no food, perhaps, or stimulants. Everything, almost, has to be improvised.

It has often been to us a matter of surprise how much the inventive genius of a surgeon, sharpened by the appeals of those who are suffering, has been able to supply.

A bivouac fire furnishes at night both light and heat; a log is a seat; a fragment of a board is a table; a few tough saplings, laid upon four crotchets, with some leaves, or a blanket, constitute a bed; cold water and words of encouragement are excellent stimulants.

Remember, gentlemen, that to the wounded and fainting soldier, *Hope* is a better cordial than brandy. And that you ought never to omit to offer words of encouragement, when it is in your power to do so.

As for food, it is well enough to know that commissaries are seldom found upon the field, either immediately before, immediately after, or during the battle.

We do not in this remark intend to imply a censure upon these officers. Their duties are laborious and perplexing in the extreme; and in order to answer all the demands which press upon them at such a time they must be ubiquitous. We only intend to state a fact; and to advise you that you will be obliged generally, after a great battle, to feed your own wounded men.

Surgeons have many times during the present war performed such miracles. After the battle of Seven Pines, with 4,000 wounded men on our hands, and with comparatively nothing to feed them, some of the surgeons, by consent of General Sumner, killed several of the horses belonging to his orderlies, and made of them a most palatable and nourishing soup. Others followed the example of Miss Nightingale at Scrutari: finding supplies of crackers and of coffee with no commissary to give the required permission to use them, they asked permission of God, and in His name broke open the boxes, and distributed the contents.

Field surgery—that is, surgical operations made under the circumstances which we have now described—has been made the subject of unfriendly criticism, by some who have been permitted to see our patients after they have been carried to the rear.

But intelligent medical men seldom venture to judge of the propriety of an operation, or of the skill exercised in its execution, by the condition of the patient or of his wound after the lapse of several days.

The most skillfully made stumps may ulcerate, slough, and open —the skin and muscles may retract and expose the bone, from faults of the constitution; from the severity of the shock attending the accident; from exposure to heat or cold; from rude jolting

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over rough roads, or from careless handling on the part of those who move them from place to place.

If, however, it could be clearly shown that there has been a good deal of bad surgery in the army; that operations have not always been judiciously timed, or skillfully made, or the wounds neatly dressed; would it justify the severity of the judgment which has sometimes been given in these cases?

Have any of these gentlemen, who find it so easy, and who feel it so much their duty to point out our errors, ever made an amputation "under fire?"

It is no uncommon thing for a surgeon on the field to be compelled to change his position once or twice during an operation, on account of a change in the direction or in the range of the shots. Such interruptions, together with the urgency of the claims of other wounded men who are lying about, render it necessary to decide quickly and to execute rapidly; and must compel the army surgeon sometimes into errors of practice, which under other circumstances, he might have avoided.—*Amer. Med. Times.*

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*The Cinchona Forests of South America.** By Dr. Karl Scherzer.

When the frigate Novara left Batavia, I cherished the hope that our stay in South America would be sufficiently long to allow of undertaking a journey to the cinchona forests; and to be able to answer, through personal observation, certain questions, entrusted to us by Dr. Junghuhn, of Lembang, in regard to the conditions essential to the growth of the species of cinchona cultivated in Java. Instead, however, of the expedition as originally planned, it was only allowed me to tread the classic soil where Humboldt gathered the first scientific treasures; and this only for so short a time, that my visit had to be limited to the capital of Peru and its immediate neighborhood. A scientific excursion to the cinchona forests lying far in the interior was out of the question, under the existing circumstances. I did not neglect, however, to translate the inquiries confided to me by Dr. Junghuhn into the English and Spanish languages, and to forward copies of these interesting desiderata to such persons in Chili, Peru and Bolivia, who, from their mercantile position, or their interest in scientific discussions, seemed to be able to contribute towards deciding several questions respecting the growth of the cinchona in its native country. I took pains, at the same time, to collect for myself information on this subject, as often as opportunity offered, and by a very fortunate accident (as it appeared to me) I met in Lima Mr. Campbell,

* From the Voyage of the Austrian Frigate Novara around the Earth, in 1857, 1858 and 1859. Vienna, 1862.

a merchant of Bolivia, who for many years has been living in Tacna, and has paid particular attention to the cinchona trade. For the chief export of this important drug is from Bolivia, and not from Peru, as its commercial name, "*Peruvian bark*," might lead one to suppose. This designation dates from the time when the Bolivia of to-day (in whose forests the cinchona chiefly grows) was an integral part of Peru, and was called Upper Peru; while from the present republic of Peru scarcely any Peruvian bark is exported, and that collected in New Grenada and Ecuador, and known under the name of Pitaya bark, is of a quality far inferior for medicinal purposes.

The most important fact which I am at present able to communicate is in correction of a wide-spread error, that by the greed of gain the extermination of the cinchona tree in its native home is near at hand, and that the supply of the remedial agent derived from its bark, which has become to the practising physician as indispensable as the Peruvian potato is to the working classes, will soon no longer suffice for its daily-increasing use. The Calisay region (i. e., in which the Cinchona Calisaya, whose bark is most prized and valuable, occurs most abundantly and thrives best) stretches from one degree north of Lake Titicaca to the twentieth degree of south latitude. In the forest of Cochabamba, viz., between this point and La Paz, the cinchona occurs more abundantly than in those forests lying parallel to La Paz, in which it is now found only at such distance from the city that the cost of transportation through the wilderness amounts to 17 pesos per hundred weight. The forests lying more southerly, on the contrary, are still untouched by the axe of the *cascarilleros*. The largest proportion is exported from Tacna and Arica; a small quantity only, suspected of being contraband, goes northward from Lake Titicaca, in order to be shipped through Port d'Islay.

From the district above mentioned 8 to 10,000 hundred-weight of bark could be gathered annually for an indefinite period, without the least danger of exterminating the tree. Since 1845 the export of cinchona bark from Bolivia has been a monopoly of the government, which conveyed the right to a company which bound itself under a certain sum to the yearly export of 4,000 hundred-weight.

This company paid the *cascarilleros*, or persons who gathered the bark in the cinchona forests, 25 to 30 pesos, for every hundred-weight of Calisaya bark delivered in La Paz, the chief city of Bolivia. But this arrangement had but partial success, for speculation and avarice, as well as the continual political unsettlement and alterations in the government of the country, stood in the way of the quiet development of this branch of industry and trade. Each new president wished to draw the greatest possible gain from the natural treasures of the soil, and the sum demanded for the right to export the cinchona bark constantly advanced. In 1850, a native mercantile house in La Paz paid to the bark gatherers 60 pesos for

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every hundred-weight, besides an export tax to the government of 25 pesos per hundred-weight, while the contractors bound themselves to a yearly collection and export of 7,000 hundred-weight. The exorbitant price paid to the *cascarilleros* occasioned an enormous quantity of Calisaya bark to be brought to La Paz. In order to restore the average, and not to fill the market far beyond the demand, the government now prohibited the cutting and gathering of the cinchona bark. Within eighteen months 18,000 hundred-weight had been delivered, and this circumstance caused such a fright among the monopolists that they declared themselves bankrupt, and were only spared from complete ruin by the moderation of the government, which took possession of the whole stock, paid the speculators with certificates, redeemable in certain periods, and concluded a new contract with a native mercantile house, in which the selling price of an hundred-weight of bark delivered in La Paz was limited to 52 pesos clear of further export duty.

As soon as the present stock is exhausted, it is probable that the prohibition on the cutting of the Calisaya bark will be again withdrawn, and by the serious lessons learned in the mean time, the excessive and dangerous eagerness of the *cascarilleros* for collecting may be prevented.

My visit in Java was just at the time when chemical experiments were being tried on the bark of the young cinchona trees, and the fact that in these the costly alkaloid was not found, excited the apprehension that the bark of these trees, cultivated with such great care, would perhaps be entirely destitute in the land of their adoption—under altered climatic and geognostical circumstances—of their most valuable constituent. But the information obtained by me in South America shows that even in its native home the quinia is met with only in the bark of the older trees, and its quantity bears a proportion to the age of the branch. The bark of the trees which are 50 years and more in age are richest in quinia. To the ignorance of this fact must probably be attributed the annual felling by the cinchona-gatherers, or cinchona-hunters *Cazadores de Quina*) during the time of the Spanish rule, of 800 to 900 cinchona trees of 4 or 5 years of age, in order to obtain the 110 hundred-weight of bark which was sent from Payta around Cape Horn to Cadiz, exclusively for the use of the royal court.

In reference also to the quantities annually exported from South America, and consumed in European preparations, very considerable errors have crept in, even in scientific circles.

The total export of cinchona from South America, from 1830 to 1860, has not exceeded, according to reliable accounts, 200,000 hundred-weight* (the seven inferior kinds not included), while of Calisaya, the real red bark (cascarilla roja), certainly not more

* Weddell, on the contrary, states that one manufactory, that of Pelletier, Delondre and Levaillaux, in Havre, had used in one year (1837) not less than 17,400,000 hundred-weight of the best cinchona bark in the production of quinia. This is either a typographical error, or a colossal exaggeration.

than 120.000 hundred weight has been sent abroad. While thus the yearly export of Peruvian bark appears to be far less than is generally supposed, a species of cinchona has lately for the first time been discovered in the forests of Bolivia, between Tarija, Cochabamba and La Paz, whose bark is said to possess the same characteristics as that of the Cinchona calisaya. The curate of Tarija has offered for sale nearly 3,000 hundred-weight of this valuable bark (called *Sucupira* by the Indians). The position of the forests is so favorable for export, that the freight from Tarija to Iquique, the nearest seaport, is but from 8 to 10 pesos per hundred-weight.

Upon referring to these communications, and to the not inconsiderable increase which has resulted from the successful propagation of the cinchona in Java and the East Indies, all apprehension may disappear that this noble tree is nearly exterminated, and suffering humanity threatened, by ignorance and vandalism, of being deprived of one of the most active and important of the physician's remedies.—*American Journal of Pharmacy*, from *Vierteljahresschrift für Praktische Pharmacie*, Bd. xii. H. 1.

Fistula in the Pericardium (?)—M. C. D., aged 2 years and 4 months, was admitted into Hospital for Sick Children, Nov. 7, under the care of Mr. Thomas Smith, for a fistulous opening on the left side of the middle left line of the abdomen, between the cartilages of the eighth and ninth ribs. A probe passed into the opening glided between the ribs and passed upwards towards the middle line of the chest for about four inches. When in this position the probe follows the movements of the diaphragm closely, that part of the instrument which is external ascending during inspiration, and descending as the diaphragm goes up in expiration. The end of the probe quivers with each pulsation of the heart.

The *history* of the case was as follows: Five months ago the child was ill and had a swelling at the seat of the present fistula. This swelling was opened, and a pin was searched for, which the child was thought to have swallowed. No pin was found. The child was very ill and feverish after the operation, and the wound had ever since remained open, nor did it seem inclined to close. There was a scanty but persistent discharge from it.—*Med. Times and Gaz.*, March 28th, 1863.

Marriages of Consanguinity.—Dr. Dévay, after a lengthened inquiry into the subject, concludes that we may in future include consanguinity in the catalogue of morbid etiology, as far as regards the human race; and that as regards animals also, the evils resulting from unions of consanguinity are equally manifest, notwithstanding the assertions which have been made to the contrary. Hence, therefore, it is the duty of the medical man to oppose alliances of consanguinity by his instruction and advice.

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Bibliographical Notices and Reviews.

Transactions of Ohio State Medical Society, 1862. Pp. 125. Cincinnati: S. G. COBB, Printer.

This volume has been for a short time on our table. The delay in issuing it by the Publication Committee originated in the circumstance that some of the papers read by title at the meeting were not forthcoming at the time when needed by the printer.

The volume contains the *Valedictory Address* of the retiring President, M. B. Wright, M.D.; *A Prize Essay* on the *Use of Anæsthetics in Obstetrics*, by H. Culbertson, M.D., of Zanesville; and a Report of the Committee on Medical Literature. The Committee consisted of Drs. J. C. Reeve, S. G. Armor, D. S. Gans.

As it regards the merits of these papers, we have no time for lengthy remarks. In a literary point of view, they are all very respectable—quite so.

The Address of the retiring President is made up mostly of medicine and politics. The unhappy state of the country at the time it was delivered furnished abundance for comment and criticism to those who were disposed to exercise themselves with such subjects. Of course, the war involves much that relates to medicine. But medicine in itself has nothing to do with the war, its causes, or policy. Every thing pertaining to the health of the troops may come legitimately up before a State Society for consideration. What has been at the foundation of the strife, and the impulses by which it is and has been prosecuted, are subjects that have, as far as we can see, no connection with medicine, unless there is such a thing as a National Physiology. In that event the inquiry might have been proper, for there is no disputing that all the "physiologies," of right, belong to medicine—they do.

Knowing the diversity of opinion that usually obtains upon matters merely of opinion, the author of the address divided himself, in discussing some questions, so as to be respectively on each side about half of the time. By this course no room was left for complaint among the hearers. Each side received his share of

crumbs as well as cuffs. As the author, however, moved along through his subject, notwithstanding all his studied caution, inclinations were every once in a while visible.

The Essay of Dr. Culbertson, discussing the "Use of Anæsthetics in Obstetrics," has had considerable labor expended upon it. The author has shown, too, a commendable degree of zeal in collecting the opinions of members of the profession. The following are the conclusions of the author:

Conclusion 1st: That there is no nervous connection between the mother and fœtus, through which anæsthetic agents can impress the latter when given to the former.

Conclusion 2d: It is improbable anæsthetics can effect the fœtus, through the circulation, except in protracted cases of labor, and there it is highly probable but to a limited degree, compatable with the life of the child.

Conclusion 3d: That these agents promote labor by relaxing the cervix and os uteri and the perineal structures, and to a limited extent by positively serving as a parturient on the body and fundus uteri; and the latter effect we believe occurs when given by stomach.

Conclusion 4th: That although in certain stages of labor anæsthetics retard, in others they accelerate parturition, and therefore in the main such remedies do not lengthen this process.

Conclusion 5th: That humanity demands, and medical science dictates, that the human female should be relieved from the acute suffering of certain labors, as well as man or woman from other forms of pain.

Conclusion 6th: That the state of circulation in the pregnant and parturient female does not, with but few exceptions, present any obstacle to the exhibition of anæsthetics; while many of the complications demand their use.

Conclusion 7th: That most unnatural cases of labor are by these agents more readily amenable to the medical art.

Conclusion 8th: That the nervous system, in most cases of labor, is placed in a most favorable condition for recovery by the use of anæsthetics.

Conclusion 9th: The labor-pain so excites the general nervous system of the parturient female, as to induce a tolerance of anæsthetics.

Conclusion 10th: That excitement, or sedation, occasionally results from the use of these remedies in labor, offers no argument against their use, inasmuch as these effects are not followed with any unfavorable results.

Conclusion 11th: That these agents promote the vaginal secretions.

Conclusion 12th: That there has not been reported any well marked case of maternal or infantile mortality from the use of anæsthetics in labor.

Conclusion 13th: That those blood changes induced by the inhalation of anæsthetics are not peculiar to labor; but are in fact a darkening of that fluid, (from the unexpelled carbon,) as well as a decrease in its density.

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Conclusion 14th: That there are some facts contra-indicating the use of these agents, peculiar to labor.

Conclusion 15th: That nausea and vomiting sometimes result from the use of anæsthetics in labor, as well as in other cases.

Conclusion 16th: That it will require further experience to show in which temperaments these agents act best, and in which the most unfavorably.

Conclusion 17th: That the quantity of anæsthetics given is generally too large, and that if exhibited in an instrument the amount could be reduced, and a safer anæsthesia secured.

Conclusion 18th: That the first effect of chloroform on the animal fibre is to cause contraction, and the second relaxation.

Conclusion 19th: That labor-pain induces contraction of the vascular system, as well as increased activity of the circulation.

Conclusion 20th: That chloroform, and it may be ether, does not affect the secretions unfavorably.

Conclusion 21st: That ether is the more stimulating, chloroform the more sedating. The first is generally active enough for ordinary labor, but the second is needed in surgical midwifery, where a profound anæsthesia is desirable, unless maternal sedation contra-indicate.

Conclusion 22d: That ordinarily in labor the anæsthesia need not be carried beyond partial insensibility, but in extraordinary examples (already cited) unconsciousness must be induced.

Conclusion 23d: Diseases of the organs of the chest and head, but not essentially those of the abdomen, generally contra-indicate the use of anæsthetics.

Conclusion 24th: That these agents aid convalescence, both immediately and remotely, by removing the evil effects of pain.

Conclusion 25th: That several experiments performed by myself show, that by a certain application of galvanism an apparently dead etherized animal was restored.

The reader will notice among other things that the author arrives at the conclusion that chloroform is beneficial in natural labor. This conclusion will detract very much from the confidence that might have been extended by the profession to other points discussed. The idea that a natural process—one that has been fixed up by the Good Man, and that, too, in the most finished, elegant, and exquisite style—such an one, for example, as the parturient—can be improved by the arts of man, is refreshing. It has been discovered that the pain connected with the process of right belongs to the Mosaic Dispensation, and that the New requires it should be abolished (Prof. Simpson). Badinage aside, a great many are so constituted as to believe that all of the natural processes are perfect in their way, and every attempt to improve them

is mere presumption, implying the existence of powers superior to those of the Creator.

The value of chloroform in obstetric practice is confined to a very limited number of cases. The great majority of cases of labor require no artificial interference of any kind. This is a truth, an important truth, the welfare of the race considered. And until a practitioner is able to appreciate it, he may be classed among those who have something very important to learn.

The Report of the Committee on Medical Literature is pretty good in its line—short, but to the point. The things literary of the State are passed in review, and some very good remarks made. We have no space, however, for comment.

Chemistry. By Wm. Thomas Brande, D.C.L., F.R.S.L. & E. of Her Majesty's Mint, Member of the Senate of the University of London, and Honorary Professor of Chemistry in the Royal Institution of Great Britain; and Alfred Swaine Taylor, M.D., F.R.S., Fellow of the Royal College of Physicians, London, and Professor of Chemistry and Medical Jurisprudence in Guy's Hospital. Philadelphia: Blanchard & Lea. 1863.

This is a new work on Chemistry. The books already before the profession on the subject of chemistry are thought by the authors of this treatise to be amenable to grave objections as "*Handbooks*," and hence the effort to furnish a work that will answer completely the purposes of the student.

We have for some time been of the opinion that the books on chemistry have of late been sacrificing too much to symbols, formulæ, and mystical language, and thus they have concealed the great facts of chemistry in a haze of technicality. What the student of medicine needs is a work giving the general properties of bodies, a full description of each substance, and an account of the tests required for its detection. In order that the reader may have some idea of the work, we give the following from the preface:

"We see no reason for adopting an esoteric method of dealing with this Science. On the contrary, it appears to us, that without departing from the true objects of Chemistry, its facts admit of explanation, in a form to be intelligible to any educated man. It is not necessary to the progress of

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this Science, that its language should change with the opinions of every new theorist. The numerical value of atoms and volumes is not of so much importance to a student, as a correct description of the properties and uses of the substances which they represent. On this part of the subject, much labor appears to us to have been wasted by certain writers. They have apparently been engaged in working out an idea, and seeking for some Utopian standard of perfection, in a new system of notation: but in endeavoring to settle contested points on a firmer basis, they have incurred the risk of unsettling everything. Thus, instead of pursuing the inductive method, and fitting hypotheses to facts, they have introduced a deductive system, by which facts are made to bend to hypotheses; and the elementary composition of bodies is altered, in order that they may correspond to certain artificial types. There is an old French proverb which it may be well to bear in mind, in reference to this practice: '*Quand la Nature dit que telle chose est, et l'homme dit que telle chose n'est pas, il faut en croire la Nature.*'

"While we do not undervalue the usefulness of a correct language to express the facts and theories of a Science, we have the strongest objection to frequent and capricious changes, in which the good is uncertain and prospective, while the evil is certain and immediate. Chemistry is not the Science of one nation, of one profession, or of one section of chemists. Among civilized nations it has now a community of language, and by this language, it is more closely linked to Arts, Manufactures, and Medicine, than any other branch of knowledge; hence, changes, to be useful, should be such as are required by urgent necessity, and are likely to command general acceptance by their reasonableness and expediency. After all, it must be remembered that these changes are not in the *facts*, but in a supposed improvement in the mode of expressing them; and if only partially adopted, they necessarily lead to confusion. Reasoning from the past to the present, it is not too much to infer that a student of Chemistry must be prepared for a new crop of systematic names, and a new classification of elements and compounds, every ten years.

"Our intention in the preparation of this volume has been, not to furnish a Treatise on the Science, but to provide the student, and the general reader, with a plain introduction to the subject. With ample materials at our disposal to produce two volumes in place of one, we have studiously endeavored to compress within these pages, a selection of the more important facts and doctrines of Modern Chemistry. We have adopted for the explanation of these facts, that simple chemical language which has found acceptance in the Schools and Colleges of Great Britain, France, and Germany, as well as in the best treatises on the Science.

"In addition to the general properties of bodies, we have attached to the description of each substance, a summary of its most important characters, with an account of the special tests required for its detection. The student will thus have in this book a Manual of PRACTICAL CHEMISTRY. As an adjunct to this branch of the Science, the subject of PRACTICAL

Toxicology has been introduced in reference to the most important *poisons*, and the processes for their detection. We have also treated, as fully as our space would permit, the chemical principles on which Photography is based, and have given some practical rules for the guidance of those who wish to apply their chemical knowledge to this interesting art.

"Having been engaged in teaching Chemistry in this Metropolis, the one for a period of forty, and the other for a period of thirty years, it has appeared to us that, in spite of the number of books already existing, there was room for an additional volume, which should be specially adapted for the use of students. In preparing such a volume for the press, we have endeavored to bear in mind, that a student in the present day has much to learn, and but a short time at his disposal for the acquisition of this learning. An eminent writer has truly observed, that the whole circle of the Sciences is required to comprehend a single particle of matter; but *ars longa, vita brevis*. If a Medical Student has before him only a few years for acquiring a knowledge of at least eight sciences, the efforts of those who contribute to the literature of these sciences should be directed to the elucidation of the most important facts and principles, omitting altogether those details which are either of a controversial nature, or are not yet established on a satisfactory basis. In reference to this book, it may be considered by some, that we have assigned too little, and by others, too much, space to our subject. This, however, is a question of opinion, on which persons may reasonably differ. We have taken that which seemed to us to be the proper course; and we trust we have so dealt with the principles and practice of Chemistry, that the contents of this book will prove useful to the general, as well as to the professional reader."

"Note.—The limits of this work have not allowed us to occupy our space with a separate essay on Physics. We have, however, described the more important Physical with the Chemical properties of bodies. For further details, we refer the reader either to Peschel's *Elements of Physics*, translated by West, or to the *Elements of Natural Philosophy* of the late Dr. Golding Bird.

"We have followed the example of the late Dr. Turner and other writers of repute, in excluding pictorial illustrations. Students of the present day are well acquainted with the shapes of air-pumps, gas-holders, flasks, and retorts. Those who require this aid to their studies, will find in the illustrated catalogues of dealers in Chemicals, more correct representations of apparatus, than those which are commonly met with in treatises on Chemistry."

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Editorial and Miscellaneous.

Ohio State Medical Society.—This body holds its next session at White Sulphur Springs, on the 16th of June, 1863.

This popular watering-place seems to be a favorite locality with the physicians of the State for the meetings of the Society. This is not to be wondered at. The springs are situated in one of the most delightful regions of Ohio, and of easy access from every direction. Of themselves, the springs are said to be worth a visit to the place. They have now become a favorite resort, and physicians visiting them with their families will find every thing very agreeable. Mr. Wilson, the proprietor, will superintend in person the arrangements the coming season; and it is only necessary to announce this to inspire full confidence among former visitors that things will be attended to *secundum artem.*

The buildings, walks, lawns, gardens, etc., are very ample and in fine condition. It is hoped we may have a full meeting of the Society.

American Medical Association.—It will be seen by the advertisement of Dr. N. S. Davis, Chairman of the Committee of Arrangements, that it has been decided to hold a meeting of the Association at Chicago the present year. The meeting of last year, it is known, was postponed on account of the troubles in the country. We are not acquainted with the reasons which have prompted the proposed meeting. We can see no difference between the circumstances of last and those of the present year. Troubles are still present, as formidable as ever.

In view of every thing, we are disposed to question the wisdom of the arrangement. Now is no time for a national meeting. Should the meeting take place, only a portion of the country can possibly be represented. Better have waited, we should say, another year.

Canada Lancet.—Since our last issue we have received the first number of this work. It hails from Montreal, and was commenced on the 14th of March last. It is published monthly. In

size it is very moderate. The mechanical execution is very good, and the contents give evidence of taste and ability on the part of those conducting it.

JOURNAL OF OPHTHALMOLOGY.—This is also a new candidate for public attention. It is published in New York, by Julius Homberger, M.D., Editor and Proprietor. The work, though pertaining to diseases of the eye exclusively, should be read by all those who have even occasionally to treat diseases belonging to this organ.

We place these works on our "Exchange List."

MEDICAL DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA.—At the annual commencement on the 14th of March last, the degree of M.D. was conferred on 78 candidates. The matriculants during the session numbered 319.

JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.—At the commencement held on the 10th of March, 1863, the degree of M.D. was conferred on 82 candidates. The number of matriculants for the session of 1862–'63 was 275.

MEDICAL COLLEGE OF OHIO.—At the commencement held on the 2d of March last, the degree of M.D. was conferred by this institution on 27 candidates.

MEDICAL DEPARTMENT OF THE UNIVERSITY OF BUFFALO.—At the recent annual commencement of this school the degree of M.D. was conferred on 24 candidates.

UNIVERSITY OF MICHIGAN.—The catalogue of this institution contains the names of 250 students who attended the medical lectures at the session recently closed. The number who received the degree of M.D. was 39.

HARVARD MEDICAL SCHOOL.—At the annual commencement on the 11th of March the degree of M.D. was conferred on 42 candidates.

MEDICAL DEPARTMENT OF THE UNIVERSITY OF NEW YORK.—At the commencement on the 5th of March the degree of M. D. was conferred on 56 graduates.

STARLING MEDICAL COLLEGE.—The commencement of this institution was held on the 23d of February. The degree of M. D. was conferred on 36 candidates.

Large Glandular Tumor removed from the Neck of a Boy Eight Years of Age. By D. W. CHEEVER, M.D. (Reported for the Boston Society for Medical Improvement, April 13, 1863.)—This tumor, which was about as large as two closed fists, had existed for twelve months, but had increased very rapidly in size in the last month. As it showed no signs of softening, but was steadily enlarging, and had begun to create dyspnœa by pressure on the nerves and trachea, it was deemed best to attempt its removal. The skin moved freely over it. A number of enlarged cutaneous veins ran over it in various directions. The tumor felt to the touch lobulated and movable, as if made up of an enlarged chain of lymphatic glands. It extended from near the middle line of the neck in front, back upon the edge of the trapezius on the left side, and above, from the lobe of the ear and angle and body of the lower jaw, down to, and beneath the clavicle. The left shoulder was depressed by it. The boy looked otherwise pretty healthy.

March 31.—He was etherized, and an incision made from just below the ear to near the cricoid cartilage, through the skin and platisma, disclosed a lobulated, hard, glandular mass lying mainly beneath, and partly behind the sterno-mastoid muscle. Contrary to expectation, it was found very adherent in all directions, and the lobules bound together by strong, fibrous tissue. Considerable time and care were requisite to divide the adhesions, which were too strong to yield to any thing but the edge of the knife. It was found necessary to divide the sterno-mastoid, and dissect aside the external jugular, which ran, somewhat displaced, over and through the tumor. The lower edge of the tumor extended beneath the clavicle, into and below the subclavian triangle. The base lay over the sheath of the carotid, which was necessarily exposed about two inches. Continuous dissection was required even to

the last adhesion, for they could nowhere be made to yield at all. There was considerable venous hemorrhage, but very little arterial. The flaps were brought together, and now, one fortnight from the operation, are nearly united, and the boy is doing well.

Under the microscope, the tumor was found to be composed of uniform cells, about two-thirds the size of the blood-corpuscle, filled with from four to six granular nuclei. There were a few spindle-shaped fibrous cells; but no larger cells, or evidence of any malignant disease.

Under these circumstances, I suppose it is to be regarded as a lymphatic glandular tumor of unusual size, and that there is no probability of its recurrence.—*Boston Med. and Surg. Journal.*

Researches on Henna.—The author, a graduate of the School of Pharmacy of Paris, selected Henna as the subject of his thesis. Henna *(Lawsonia inermis)* is a plant known to the people of the East from the highest antiquity. The leaves are employed either as a medicine or in the preparation of certain cosmetics. Its flowers, possessing equal medicinal virtue, are used as an agreeable perfume. They are sold in Cairo, as the lilac is in Paris.

Henna is common in the East Indies at Malabar, Ceylon, &c., and in Arabia, Persia, and Egypt, where it is very abundant. The author admits of only one species, *Lawsonia alba*, of which there are two varieties, *L. inermis* and *L. spinosa*. The leaves are employed as a topical application to ulcers of the mouth, and for staining the feet, hands, and hair. This use is perhaps less the result of coquetry than to avoid certain skin diseases so common in hot countries. The leaves are also used for dyeing light-colored woods of a mahogany color. The fruit is considered emmenagogue.

Henna is furnished to commerce in the form of powder. Two sórts are distinguished: *Henna of Arabia* and *Henna of Egypt*, the latter least esteemed. The former is often adulterated with sand and Egyptian henna, so as to be about equal in dyeing value to the latter.

The author in his chemical examination has aimed at isolating the active coloring principle. Cold water does not extract it, but it is removed by boiling water. Ether does not remove it, but extracts the chlorophylle. Alcohol of 90 per cent. completely extracts it by percolation; and when the alcohol is distilled off

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from the tincture, the syrupy residue exhausted by ether, and the residue again treated by strong alcohol, and evaporated, the active matter is obtained.

This principle is brown, of a resinoid appearance, and soluble in boiling water. It possesses the properties of tannin, such as blackening the sesqui-salts of iron and precipitating gelatin. It reduces oxide of copper in Trommer's test, and heat decomposes it with the evolution of crystalline needles, which reduce nitrate of silver. The coloring matter of henna is therefore a species of tannin, and the author has named it *henno-tannic acid.—Journ. de Pharmacie.*

Galvanism applied, by Aid of the Laryngoscope, to the Vocal Cords.—The electric current has been brought to bear directly on the vocal cords by Dr. Morell Mackenzie, and two cases of functional aphonia have yielded to it immediately. One patient had completely lost her voice for two years, and had been in London Hospital for some months, where every remedy had been used in vain by Dr. Mackenzie. Cauterization of the larynx, blisters, and even the employment of galvanism externally, had all failed, but the application of galvanism directly to the vocal cords succeeded at once, and after a week the patient spoke as well as she had two years previously.

In the other case, where the loss of voice was of eighteen months' duration, and where every kind of treatment had been tried unsuccessfully in the London Hospital, the voice was immediately restored by galvanism directly applied to the vocal cords. Dr. Mackenzie has invented an instrument, by which the electric current can be set going, but does not pass beyond a certain distance till the point is introduced into the larynx, when a spring is touched, and the current reaches the vocal cords. Dr. Mackenzie recommends the remedy in the early stages of clergymen's sore-throat, before the perverted state of the nerves has led to follicular deposit.—*Med. Times and Gaz.*

Manufacture of Saltpetre.—Saltpetre is obtained in the Mammoth Cave, Kentucky, and considerable quantities were obtained from this source during the war of 1812. It is derived chiefly from the excrements of bats, etc. Most of all the saltpetre which

is employed for the manufacture of our gunpowder comes from India. It is not known whether any saltpetre is now obtained from natural sources in the Southern States. If the secessionists were deprived of this substance entirely, they could not carry on a war. The nitrate of soda is very abundant in many parts of the world, and were it not so deliquescent, it would answer just as well for making gunpowder as nitrate of potash. The formation of natural saltpetre is a very slow process, requiring about two years to complete. During the French revolution 2,000 tons were made in one year in Paris; and were foreign supplies cut off, twice this quantity could be made in the same space of time in the city of New York with its present number of inhabitants. In Sweden each peasant who owns a house is bound by law to make a certain quantity of saltpetre every year for the use of the State. In Spain, Egypt, Persia, and especially India, vast quantities of this salt are made annually; and it is not only a source of great profit but of warlike power to Great Britain.—*Scientific American.*

On Chestnut-Leaves in Hooping-Cough. By GEORGE C. CLOSE, of Brooklyn, N.Y.—I wish to call the attention of the members of the Association to an article not recognized in the Pharmacopœia, and the use of which as a medicine has only recently come to my knowledge. This article is the leaf of the common chestnut-tree *(Castanea vulgaris).*

Having a child whom I supposed to be affected with incipient hooping-cough, I asked a prominent physician of New York, who has had an extensive practice for more than thirty years in the city, what he thought was the best remedy for hooping-cough. He answered, "Chestnut-leaves are by far the best remedy I have ever met with." Upon this, I immediately commenced giving to the child an infusion of the leaves made with boiling water and sweetened with sugar. She drank it freely and without objection, the taste not being unpleasant. The cough, which had continued for two weeks, and was evidently growing worse previous to giving the remedy, was immediately relieved, and after two or three days ceased entirely, and has not returned, though several months have passed.

Since making this trial, when asked by customers, "What is good for hooping-cough?" I have advised them, if they had no

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physician in attendance, to try the leaves. In several instances after trying them, they have reported to me that "they acted like a charm," and gave immediate and great relief.

I have also heard of cases of adults, who were affected with that kind of spasmodic cough which is sometimes caused by some (perhaps slight) source of irritation in the throat, being immediately relieved by the same remedy.

As I have occasionally calls for chestnut-leaves, I asked a person who applied for them a few days since for what purpose he used them. He replied, as a remedy for hooping-cough, for which they were very good, and that they often relieved other kinds of cough also. This shows that their use is becoming somewhat popular as a domestic remedy.

A very extensive use of an article is required, however, to test its real value as a remedy, and I only present the foregoing facts as warranting, in my judgment, further trials of the leaves.

I also present a specimen of the dried leaves procured green and cured by myself, and a sample of the fluid extract made from the powdered leaves in the usual way, using diluted alcohol as a menstruum.

Although the use of chestnut-leaves as a remedy is new to me, it may not be to all the members present; and if any of them can give further information upon the subject, I hope they will do so for the benefit of the Association.—*Proc. Am. Pharm. Assoc.*, 1862.

Purity of Frozen Water.—M. Robinet has made a variety of experiments to ascertain how water is freed from saline impurities by congelation, and his results go to show that the small amount of lime and magnesian salts in potable waters is forced out in the act of freezing as completely as the more soluble salts present in sea-water. Frozen water, he says, is so far purified that it may in most cases be used for chemical purposes in place of distilled water. In reference to this, M. Martens adds, that in his photographic excursions among the Alps he found that he could always use the waters from the glaciers instead of distilled water, but that dissolved snow did not answer.

Dr. Rudorff has also made experiments on the freezing of saline solutions (*Bericht d. Akad. der Wissensch. zu Berlin*, 1862, s. 163). He employed the platino-cyanide of magnesium, the solution of

which is colorless; but he found that when the solution was frozen so far that the water left was not enough to hold the salt dissolved, crystals of the well-known beautiful appearance were formed. Other curious results were observed with a supersaturated solution of sulphate of soda. When such a solution was cooled below the freezing point, and the formation of ice prevented, it was found that a piece of ice dropped in determined the formation of ice, while a crystal of the salt caused the formation of crystals of the salt. A very small piece of the salt dropped in with ice caused the separation of the whole of the salt. He noticed, too, that the lowering of the temperature produced an alteration in the constitution of the solution. For instance, when a solution of the blue salts, CuCl+12HO, was frozen, the unfrozen water contained the green salt, CuCl×4HO. Other curious results will be found in the paper referred to.—*Chemical News, London.*

Statistics of the Globe.—The following curious facts are stated by the *Abeille Médicale:* The earth is inhabited by 1,288 million of inhabitants, viz., 369,000,000 of the Caucasian race; 552,000,000 of the Mongolian race; 190,000,000 of the Ethiopian; 1,000,000 of the American Indian; and 200,000,000 of the Malay races. All these respectively speak 3,064 languages and profess 1,000 different religions. The amount of deaths per annum is 333,333,333, or 91,954 per day, 3,730, per hour, 60 per minute, or one per second. The loss is compensated by an equal number of births. The average duration of life throughout the globe is 33 years. One fourth of its population dies before the seventh year, and one-half before the seventeenth. Out of 10,000 persons only one reaches his 100th year: only one in 500 his eightieth, and one in 100 his sixty-fifth. Married people live longer than unmarried onés; and a tall man is likely to live longer than a short one. Until the fiftieth year women have a better chance of life than men; but beyond that period the chances are equal. Sixty-five persons out of 1,000 marry; the months of June and December are those in which marriages are most frequent. Children born in Spring are generally stronger than those born in other seasons. Births and deaths chiefly occur at night. The number of men able to bear arms is but one-eighth of the population. The nature of the profession exercises a great influence on longevity; thus out of 100

of each of the following professions the number of those who attain their 70th year is: Among clergymen, 42; agriculturists, 40; traders and manufacturers, 33; soldiers, 32; clerks, 32; lawyers, 29; artists, 28; professors, 27; and physicians, 24, so that those who study the art of prolonging the lives of others are most likely to die early, probably on account of the effluvia to which they are constantly exposed. There are in the world 335 millions of Christians, 5 millions of Jews, 600 millions professing some of the Asiatic religions; 160 millions of Mohamedans, and 200 millions of Pagans. Of the Christians, 170 millions profess the Catholic, 76 millions the Greek, and 80 millons the Protestant creeds.

On Pure Pepsin, by M. R. Bruecke.—Pepsin can be precipitated from its solutions by agitation with cholesterin, phosphate of lime, or animal black; dissolved in water containing phosphoric acid, it can also be precipitated when neutralized with lime water, and is contained in the precipitate of phosphate of lime without being in combination with that salt.

On these facts, M. Bruecke has based a new process for the preparation of this important substance; he has obtained it in a state of purity unknown to this time, and which permits him to rectify a good number of statements in regard to it in the treatises.

Two recent hogs' stomachs are digested in weak phosphoric acid, at the temperature of 100 F., which detaches the mucous coat in fragments. The solution is filtered, and the residue again digested at the same temperature. The filtrate should be clear, and yellow prussiate should not indicate albumen. Lime water is now added until the neutralization is nearly complete as tested by litmus, the precipitate collected, expressed, and dissolved in water containing hydrochloric acid. The clear solution is again precipitated by lime water, redissolved by hydrochloric acid and filtered.

Into a flask, sufficiently large to contain the liquid, a funnel with a long beak is introduced, and into it a solution of cholesterin, prepared cold, with a mixture formed of four parts of alcohol of 94 per cent. and one part of ether. By contact with the acid liquid the cholesterin separates in very fine particles and rises to the top of the liquid; when the coagulum acquires the thickness of about two centimetres, the funnel is removed and the liquid shaken

quickly and frequently, by which the pepsin is removed from solution by the cholesterin; afterwards filter, wash the filter with acid water and then with pure water, till the washings lose their acidity and reaction with nitrate of silver. Now in treating with ether, the cholesterin is dissolved whilst the adhering water forms an opaque layer with the pepsin, which is agitated repeatedly with fresh portions of ether, until nothing remains but an aqueous liquid from which the adhering ether passes off, and leaves a transparent solution of pure pepsin.

When acidulated with dilute hydrochloric acid, this liquid possesses energetic digestive properties, dissolving fibrine readily in an hour.

As has been remarked, that pepsic liquid is far from partaking of the reactions which are usually considered the characteristics of pepsin. Thus it is not affected by any of the reagents which indicate albumen, as per example by nitric acid, tincture of iodine, tannin and bichloride of mercury. This last point is of great importance, since the pepsin analyzed by M. Schmidt was prepared by precipitation with bichloride of mercury.

Nitrate of silver renders the liquid lightly opaline. Bichloride of platinum occasions a sensible troubling; it is precipitated abundantly by the acetates of lead, even in the presence of free acetic acid. It follows from this that our ideas of pepsin ought to be modified and its analysis made.—*Jour. de Pharm.*, Dec. 1862.

Congenital Lachrymal Fistula.—J. R., aged 6½, was brought to the Hospital for Sick Children, for an opening over the right lachrymal sac, as large as a pin's head; it had existed since birth. There was no obstruction to the lachrymal passage either in the eyelid or nose. A probe could easily be passed downwards through the fistula into the lower nasal meatus. Caustic applied to the edges and the actual cautery failed to close the opening, and the boy left off attendance after an unsuccessful attempt to cure the fistula by paring the edges and uniting them with metallic suture.—*Med. Times and Gaz.*, March 28th, 1863.

Congenital Contraction of Anal Orifice.—A girl, a few months old, came under care at the Hospital for Sick Children, for a mal-

formation, which, Mr. Smith said, was not unusual, though almost unrecognized.

On March 7, it was brought, with suspicion of having calculus, though its symptoms were great pain and straining, and difficulty in defecation. On examination, the anal orifice was found to be so minute as to account for the symptoms conplained of. The orifice was about the caliber of a No. 6 catheter.

Mr. Smith said that on the next visit he should treat this child as he had done others with the same malformation, and he hoped with the same success. The plan hitherto adopted is to make an incision at the anal margin, in the middle line towards the coccyx, and, if necessary, on either side as well, and to tell the mother to insert from time to time a piece of oiled sponge pretty tightly screwed up so as to expand.—*Med. Times and Gaz.*, Mar. 28th, 1863.

The Hypophosphites.—Hypophosphite of Lime.—To one Troy pound of freshly-burned lime, add 1½ gallons (wine measure) of hot water and ¼ lb. phosphorus. Boil them together in a water bath, adding the phosphorus piece by piece, until it is all decomposed; which will require upwards of 24 hours. It should be made in a new three-gallon tin oil-can, with a mouth not exceeding 2 inches in diameter, which must not be obstructed; and the operation be performed in the open air. After filtering, pass carbonic acid through the solution, until a portion of the precipitate thrown down is redissolved. It is now to be refiltered, and evaporated with a heat not exceeding 140 degrees Fahrenheit. Any heat above 220 degrees, in the first boiling, decomposes the hypophosphites. Carbonic acid is most cheaply generated from chalk and sulphuric acid.

If the remedy is to be prescribed in solution, all that will be necessary will be to drive off the carbonic acid and filter; when the dose would be a teaspoonful in milk, three times a day.

Hypophosphite of Soda.—Is made by adding carbonate of soda (sal. soda) to the solution of hypophosphite of lime, so long as it yields a white precipitate: using great care not to add it in excess; then filter and evaporate, or give as before. This salt is much pleasanter to the taste than the former. A good way would be not to add quite enough of the carbonate of soda, then the two salts would be in combination; a favorite manner of prescribing them.

When faithfully prepared according to the above directions, the hypophosphites will be found well worthy of a trial in Phthisis in all its stages; and to be far superior to any purchased article, in point of expense and purity.

Dr. Churchill says it must be discontinued, should it cause any feeling of fullness in the head, giddiness, singing in the ears, or bleeding at the nose, however slight.

It may be given with the food. I often direct it to be taken in the tea or coffee, where it cannot be detected.—*Canada Lancet.*

The Turkish Bath.—Clothed in a loose dress, the bather is conducted into a heated room, where he sits until accustomed to it, his body soon becoming covered with perspiration. He is next led into a vapor bath of much higher temperature (115° F.); where reclining on a marble slab, he undergoes a slow process of shampooing, which consists in pressing and kneading the flesh, and stretching and relaxing the joints. The quantity of cuticle that peels off during this operation, surprises one who has not witnessed the process. It necessarily leaves the skin extremely clean. The bather is finally conducted to a recess, which is supplied with fountains of hot and cold water, where he washes himself with soap, or has it performed for him as his taste directs. The feeling of languor, supervening after a Turkish bath, renders the short period of repose allowed him on a couch, extremely agreeable.

The Turkish Bath in Lunacy.—Dr. Power, of the Cork Lunatic Asylum, says, that owing to the introduction of this form of bathing in that institution, more than double the number of cures have been produced, than in any other asylum in the British Isles.

Fracture with Dislocation of the Spine.—John Lynch, æt. 32, a healthy laboring man, received, on the morning of the 31st December last, a severe injury from a large beam, weighing, he says, upwards of a thousand pounds. It struck him on the shoulder and back, prostrating him insensible, in which condition he was admitted into the Montreal General Hospital, under Dr. Mc-

Callum, who, on examination, found fracture with dislocation of the eleventh and twelfth dorsal vertebræ, the former being depressed nearly an inch, and the corresponding prominence of the twelfth being very marked. On returning consciousness, he suffered from the most excruciating pain in the thighs, and had lost all power over the lower half of his body. Preparations were at once made to reduce the dislocation; to effect this, the upper part of the body was fixed by passing a sheet around the back, and beneath the axillæ, and another being arranged around the pelvis; gradual and powerful extension was made, steady pressure being at the same time exerted over the lower and projecting portion of the spinal column. The dislocation was thus reduced without deformity, and gave immediate relief to the pain, but did not affect the paraplegia. Splints were applied to the vertebræ for a time. The paralysis of the bladder and sphinctus, so troublesome after the accident, has gradually disappeared, but up to the present, February 10th, the paraplegia remains unchanged.—*Canada Lancet.*

The Flathead Indians.—The Flatheads extend over a wide range of country from 130 miles up the Columbia river to its mouth, and along the Pacific coast and the Straits of De Fuca, Puget's Sound, and Canal Diaro, to near the mouth of Frazer's river; as well as on Vancouver's Island. . . . . During Mr. Paul Kane's travels among those tribes he saw hundreds of children undergoing the process of flattening the head, and thus describes the mode of procedure. The infant is strapped to the cradle-board, which is carefully covered with moss of finely-frayed fibres of cedar-bark, and is fitted with a head-board which projects beyond the face, so as to protect it from injury. In order to flatten the head, a pad, made of a piece of skin stuffed with soft cedar-bark, is laid on the infant's forehead, and on the top of this a slab of hard bark, with the smooth side under. This is covered with a piece of pliant deer-skin, and is bound tightly by means of a leathern band passing through holes in the cradle-board, while the head is supported and kept in an immovable position by a pillow of grass or frayed cedar-bark placed under the back of the neck. This process commences immediately after the birth of the child, and is continued

for a period of from eight to twelve months, by which time the head has assumed the flattened or wedge-shaped form, which constitutes the ideal of Chinook or Cowlitz grace. Another process is by means of a square piece of leather, with thongs attached to the four corners, placed over a pad on the forehead, and secured tightly to the board. Other pads are placed under the head, and at its sides, according to the special form which it is desired to give it. Mr. Kane remarks: "It might be supposed, from the extent to which this is carried, that the operation would be attended with great suffering, but I have never heard the infants crying or moaning, although I have seen the eyes seemingly starting out of the sockets from the great pressure. From the apparent dullness of the children whilst under the pressure, I should imagine that a state of insensibility is induced, and that the return to consciousness occasioned by its removal, must be naturally followed by the sense of pain." The brain in its process towards maturity seems partially to recover a less abnormal form, especially where the pressure has been applied so as to produce the elevated wedge-shape, with the breadth of the whole mass presented in front and rear. Mr. Kane was led to the conclusion that this violent process in no degree injures the health, as from inquiries made by him it did not appear that the mortality among the Flathead children is greater than among other Indian tribes. The evidence that it leaves the intellect unimpaired, rests on more absolute proof. The Flathead tribes are in the constant habit of making slaves of the neighboring roundheaded Indians, whom they treat with great barbarity; and though living among them, these are not allowed to flatten or modify the form of their infants' heads, that being a distinguished mark of freedom, and a badge of aristocratic descent. They look with contempt on the whites as a people who bear in the shape of their heads the hereditary mark of slaves. They are, moreover, acute and intelligent, have singular powers of mimicry, and have been noted for very retentive memories: being capable of repeating passages of some length, and with considerable accuracy, when recited in their hearing. It would, indeed, appear, that alike in the time of Hippocrates and in our own day, an idea has prevailed among those who practiced the strange barbarian usage of remodeling the human head, that they thereby not only conferred and added grace to its form, but that they contributed no less to the mental superiority of those among whom this has ever been the

peculiar symbol of aristocracy, and the mark of the dominant race. If it did, in reality, produce an opposite effect, and tend either to mental inferiority or absolute insanity, it would lead to speedy and inevitable revolutions among those tribes where the helots are rigorously excluded from the practice. But neither among the Peruvians, nor the ancient or modern North American tribes, is there any evidence of the normal cranium having thus practically demonstrated its superiority over the deformed or flattened skull. —*Prehistoric Man*, by DANIEL WILSON, LL.D.

On the Natural Constituents of the Healthy Urine in Man. By Rev. SAMUEL HOUGHTON.—Professor Houghton dissents from the view of Barral and others, that the nitrogen extracted from the body is discharged in two nearly equal parts, one *per vesicum et anum*, the other *per cutem et halitum;* and is of opinion that under ordinary circumstances this element passes off, with the exception of a small quantity in the feces, entirely in the urine. The prime object of the writer is to estimate the quantity of urea excreted under the varying conditions of physical and mental labor; the amount of urea being regarded as a measure of the waste of tissues involved in each species of work. In order to do this, observations were made on various persons, some chiefly engaged in mental, some in bodily labor. The conclusion (it is impossible in our space to give the complicated materials and means by which the author arrives at them) are these:

"1. The quantity of urea passed per day by men in health varies with their food and occupation, the latter being the principal cause, and regulating the other.

"2. Men employed only in manual or routine bodily labor are sufficiently well fed on vegetable diet, and discharge on an average 400 grs. of urea per day, of which 300 grs. are spent in vital and 100 grs. in mechanical work. This conclusion is in conformity with the experience of the mass of mankind employed in manual labor, in all ages and countries.

"3. When the work is of a higher order, a better quality of food must be supplied, sufficient to allow of a discharge of 533 grs. per day of urea, of which 300 grs. are spent, as before, in vital work, and 233 grs. in mental work, and the mechanical work necessary to keep the body in health.

"4. The quantity of urea discharged per day varies also with the weight of the individual, which influences the vital and mental work.

"5. The habits, weight, and occupation of the individual enable us to account for a range of the diurnal quantity of urea, varying from 300 to 630 grs. per day; and this discharge may be confidently predicted when the habits and weight are known.

"When, in any case, the discharge of urea exceeds that calculable by the preceding data, it must be attributed to ill health, and most generally to that most fatal of all diseases to which man is liable—anxiety of mind—a vague and unscientific expression, which, however, denotes a most real disease.

"This fact alone would render the preceding investigation of importance to the physician, as it enables him, in a given case, to pronounce whether there is an excess of urea or not, and a consequent waste of the system. I have shown that the mere quantity will not decide this question, as from 300 to 630 grs. may be discharged by persons in perfect health, according to their peculiar work and physical conditions."—*Dublin Quart. Journ. of Med. Sci.*

On the Preparation of Crystallizable Acetic Acid. By M. TILLMANS.—Take six parts of acetate of soda in crystals, fuse the salt in its water of crystallization, and evaporate to dryness, and melt the dry mass by a carefully increased heat. The residue weighs but half as much as the original salt. This is distilled with five parts of the ordinary sulphuric acid to dryness. The product is apt to contain sulphuric acid, which is removed by a little litharge and redistilling which gives the acid pure. By exposing the product to the cold till it crystallizes, and draining off the liquid portion, by which the remainder is left as a monohydrate, six parts of acetate of soda gives 2½ parts of glacial acetic acid.—*Journ. de Chim. Med.*

OHIO STATE MEDICAL SOCIETY.

The Annual Meeting of the Ohio State Medical Society will be held at the White Sulphur Springs, commencing on Tuesday, the 16th of June, 1863. Every arrangement will be made for the comfort and convenience of those in attendance.

EDWARD B. STEVENS, *Secretary.*